

## APPENDIX D. EMISSION DATA FOR ULTRAWIDEBAND TRANSMITTERS

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This appendix contains measured emission spectra and time waveforms for five ultrawideband transmitters, and also for a Part 15 device (specifically, an electric drill). Measurement techniques are described in Sections 5 and 6. Analysis and commentary are provided in Section 8.

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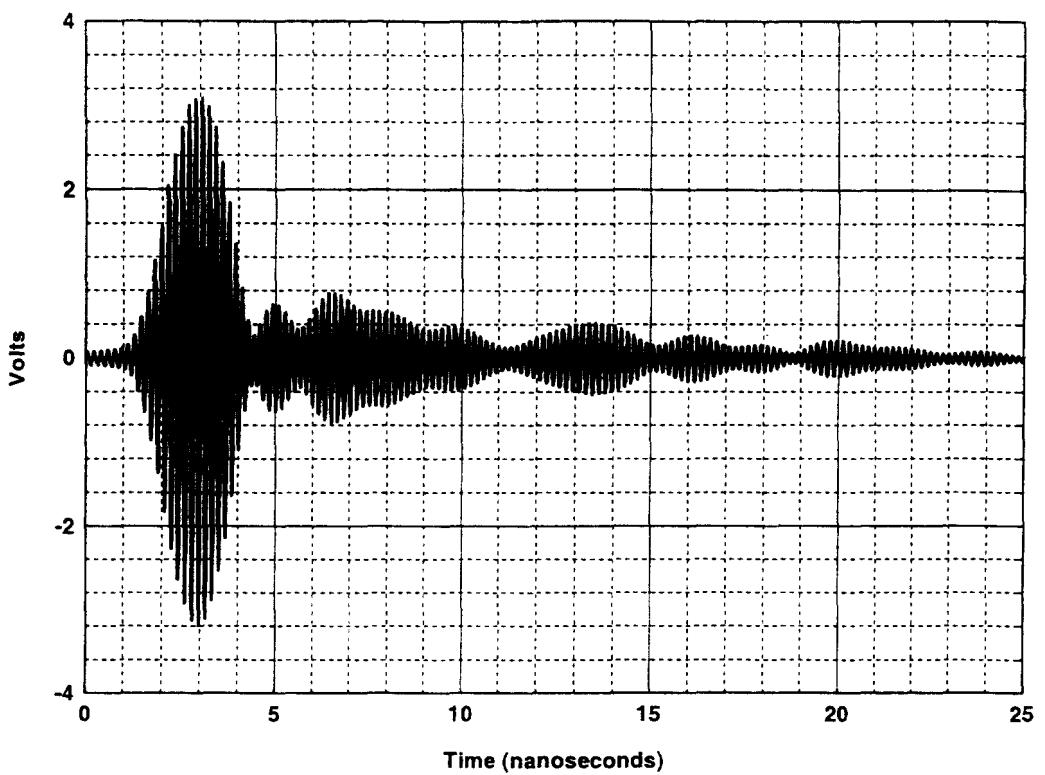


Figure D.A.1. Device A, conducted time-domain waveform.

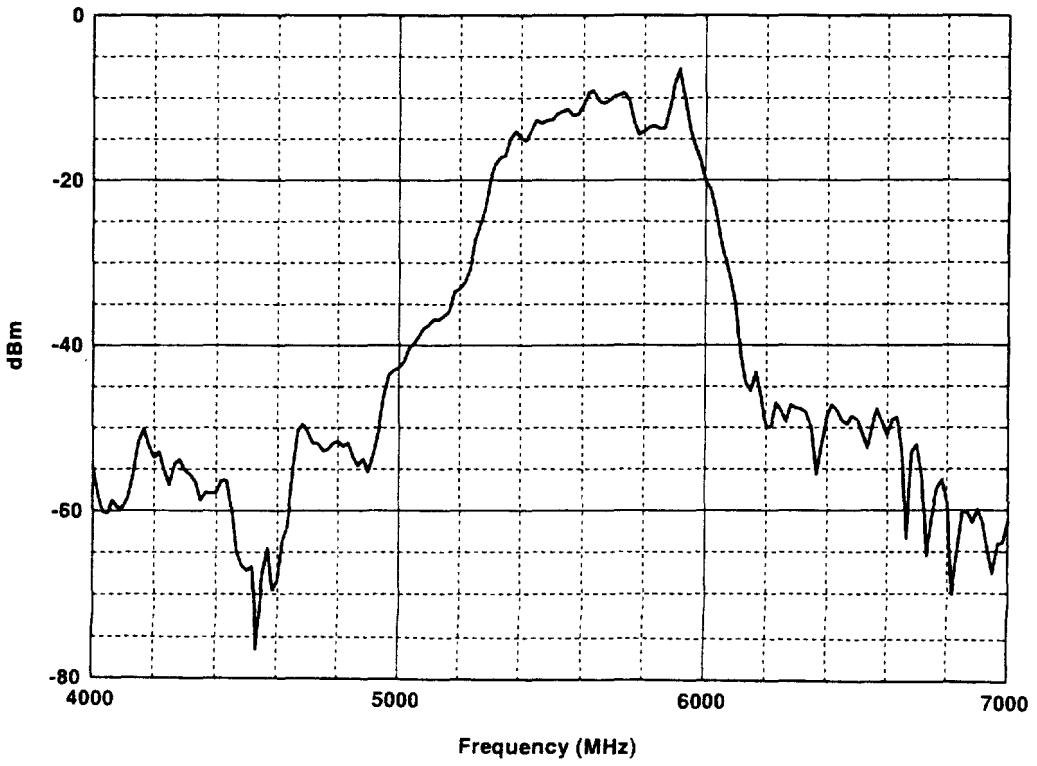


Figure D.A.2. Device A, conducted power spectrum,  $\Delta f = 16.67$  MHz.

D-A-2

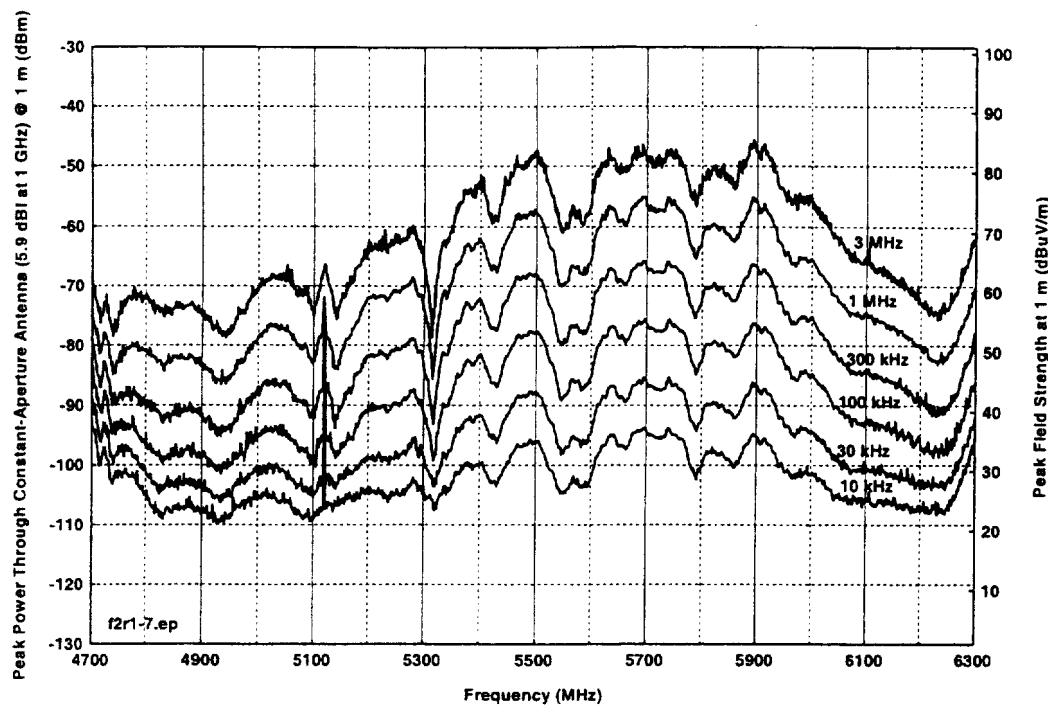


Figure D.A.3. Device A, spectra as a function of measurement bandwidth.

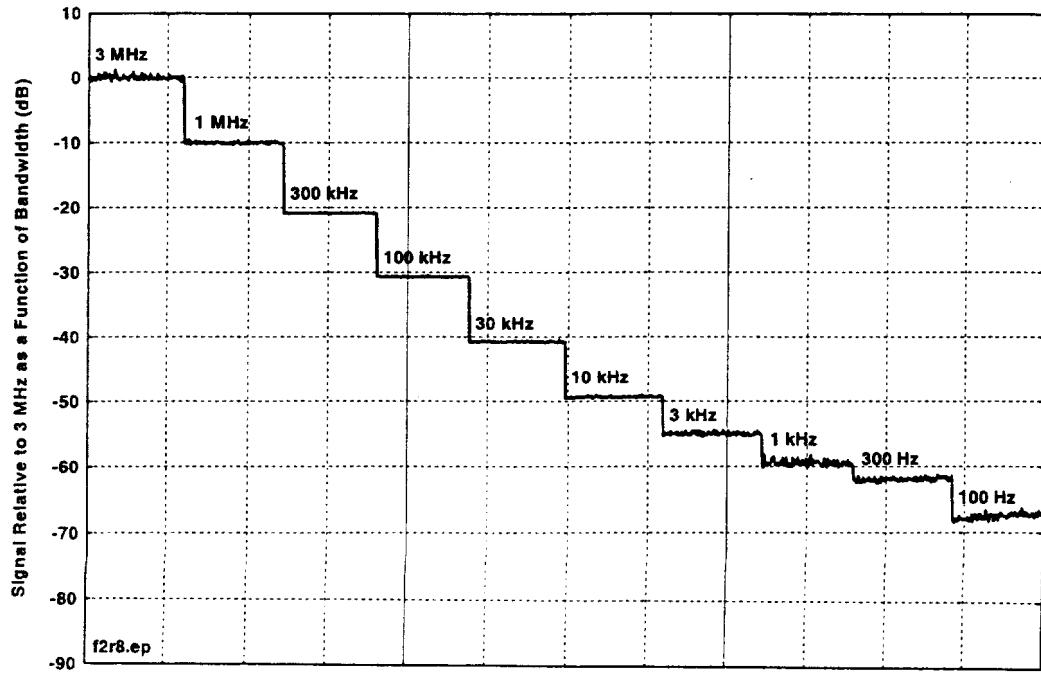


Figure D.A.4. Device A, peak signal level as a function of bandwidth.

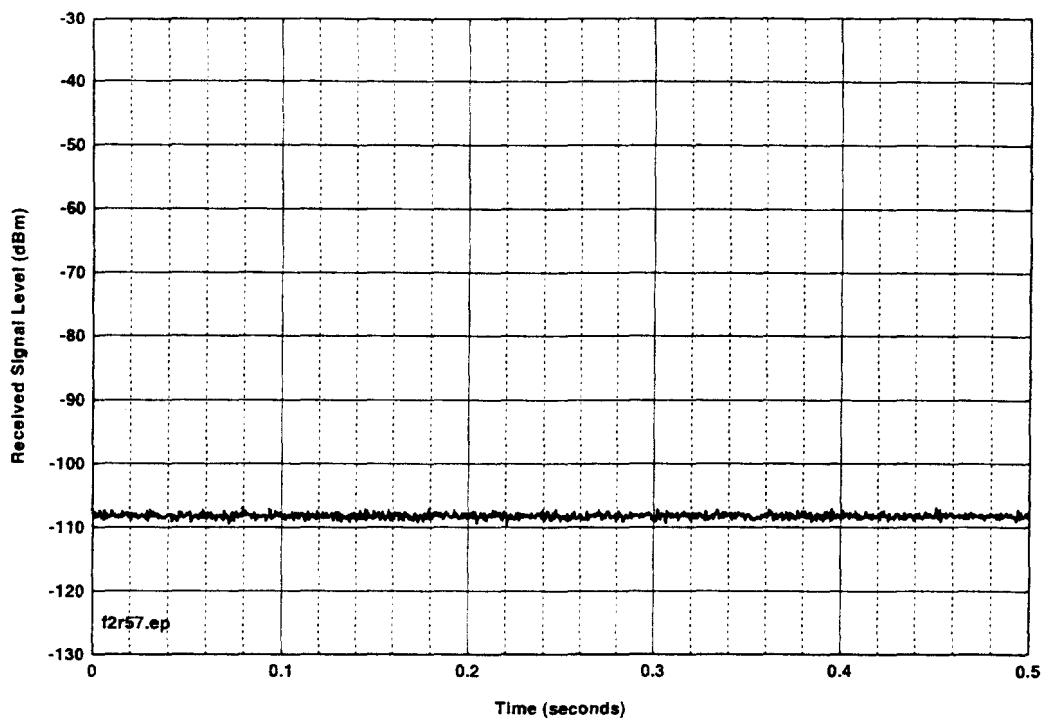


Figure D.A.5. Device A, emission in 10-kHz video bandwidth.

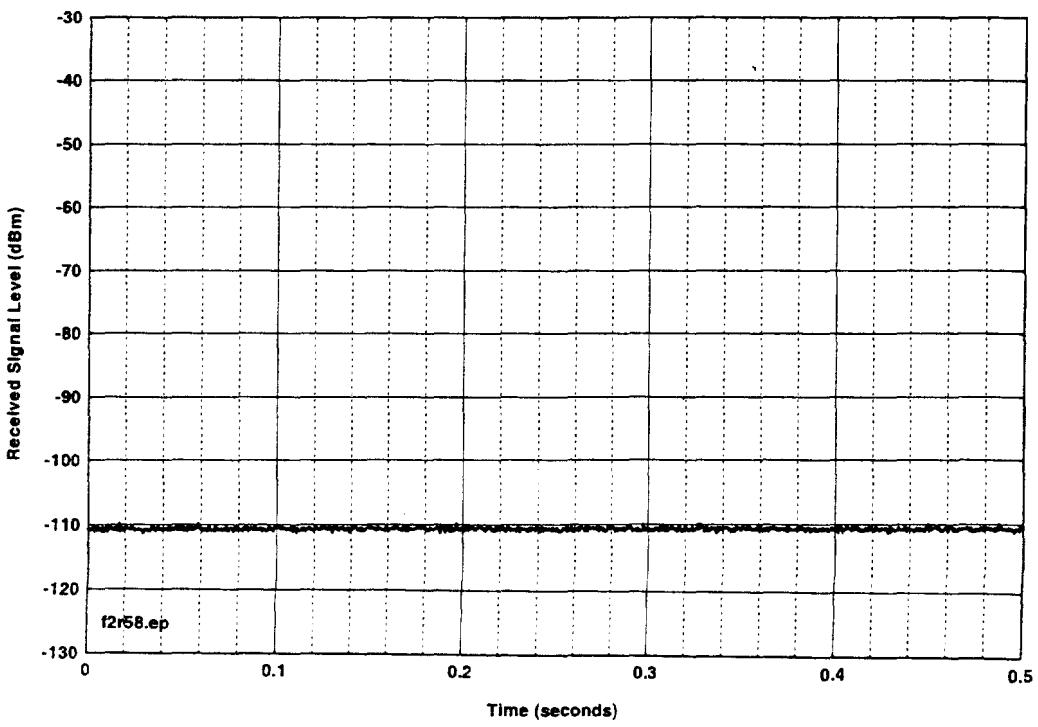


Figure D.A.6. Device A, emission in 3-kHz video bandwidth.

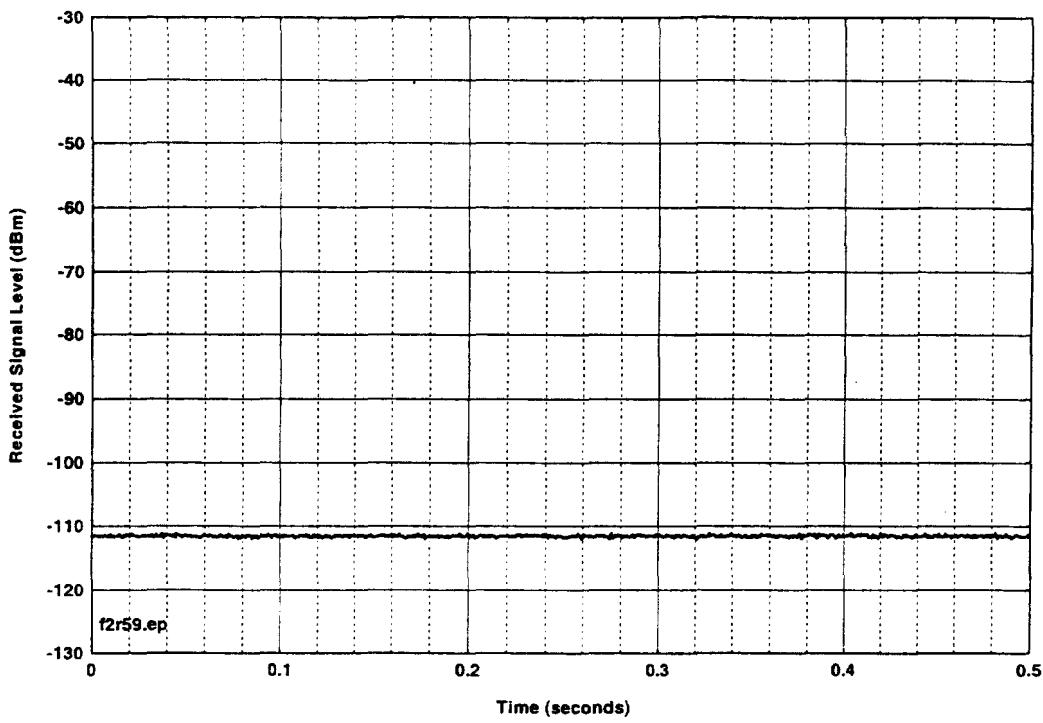


Figure D.A.7. Device A, emission in 1-kHz video bandwidth.

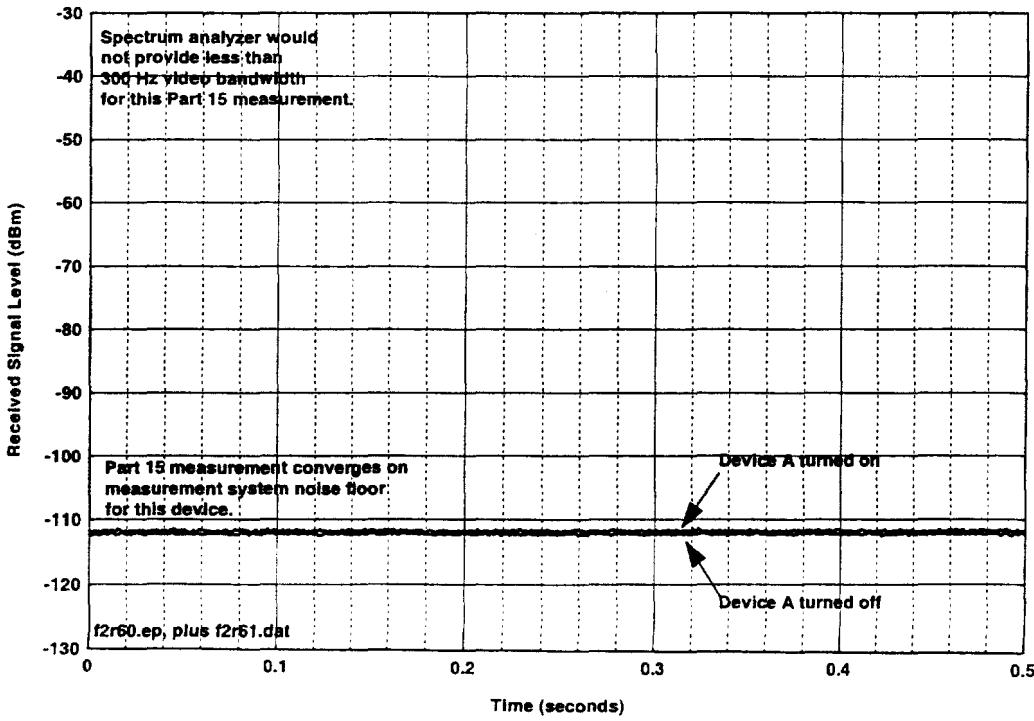


Figure D.A.8. Device A, emission in 300-Hz video bandwidth: converges on measurement system noise floor.

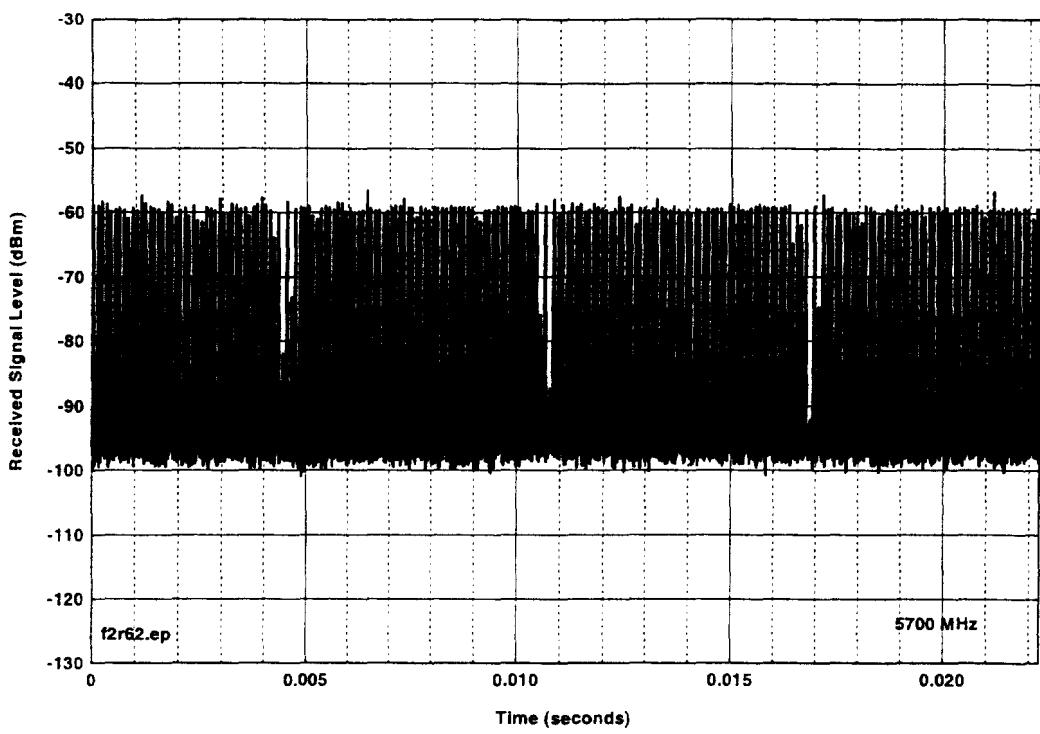


Figure D.A.9. Device A, peak emission in 3-MHz IF bandwidth.

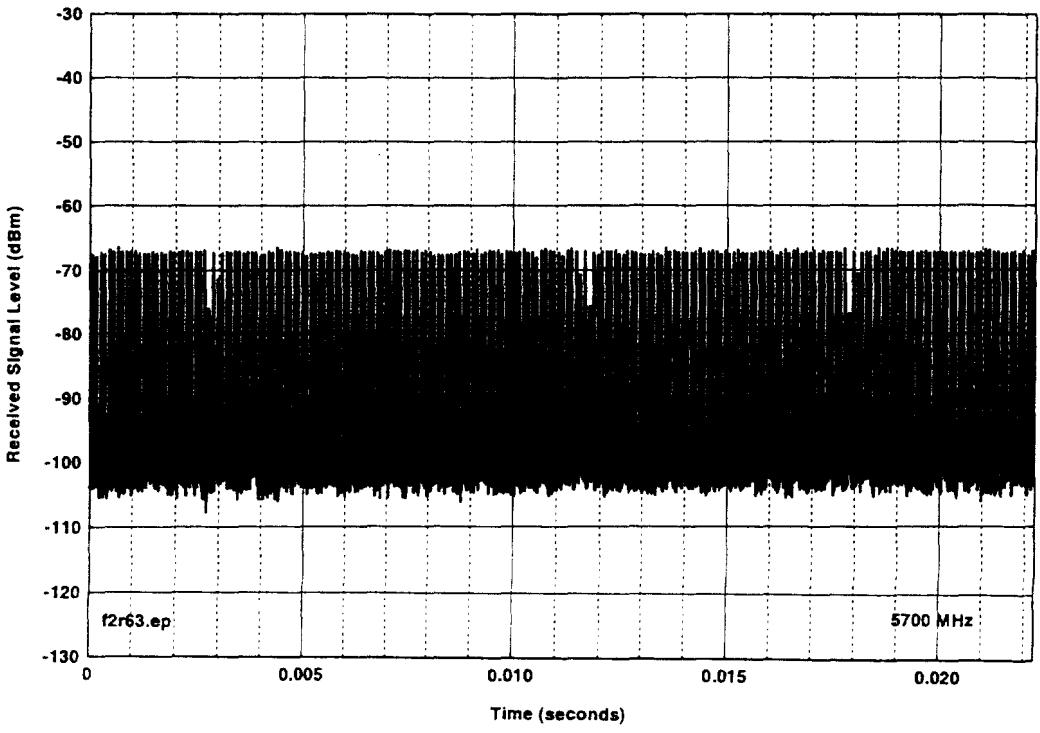


Figure D.A.10 Device A, peak emission in 1-MHz IF bandwidth.

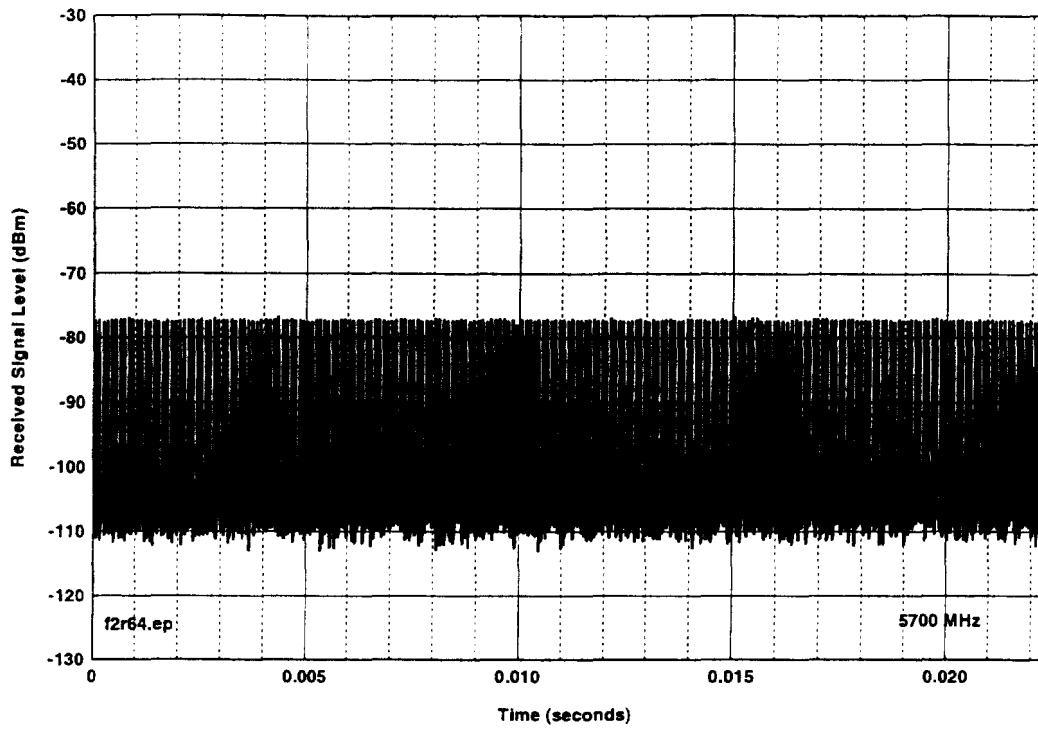


Figure D.A.11. Device A, peak emission in 300-kHz IF bandwidth.

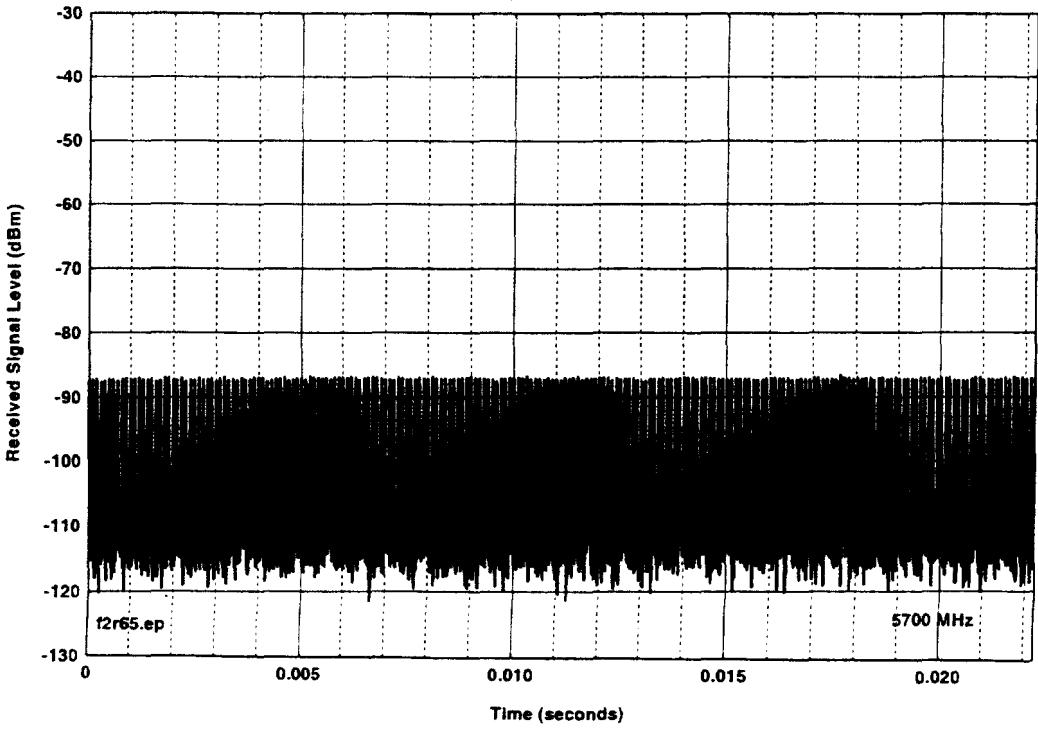


Figure D.A.12. Device A, peak emission in 100-kHz IF bandwidth.

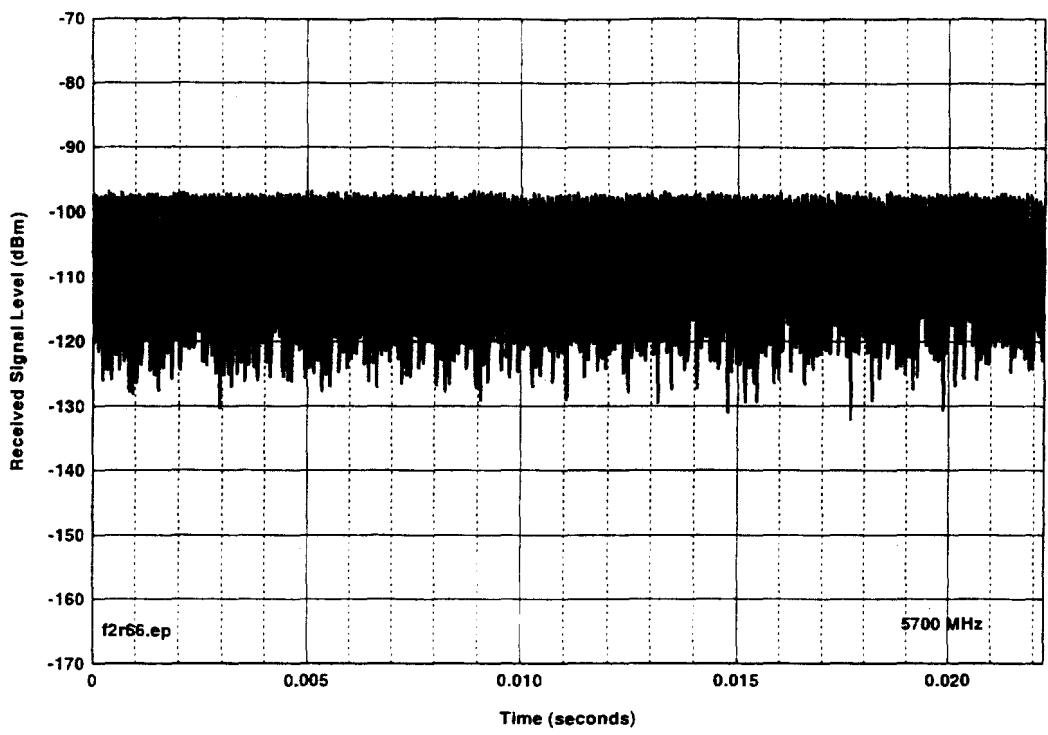


Figure D.A.13. Device A, peak emission in 30-kHz IF bandwidth.

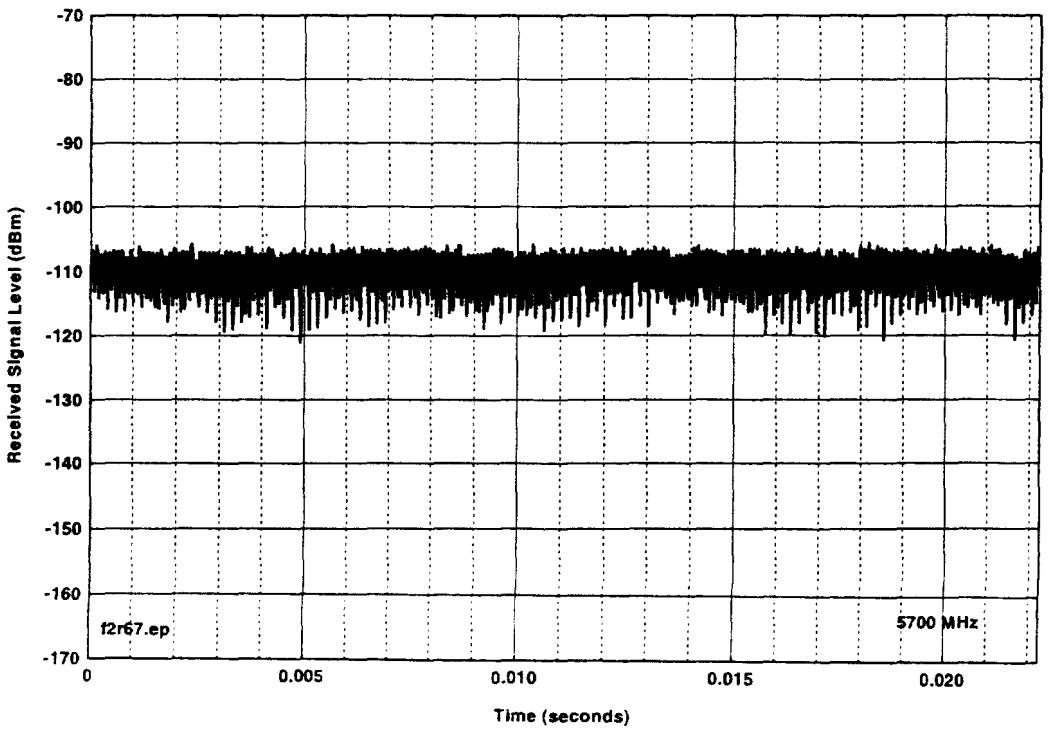


Figure D.A.14. Device A, peak emission in 10-kHz IF bandwidth.

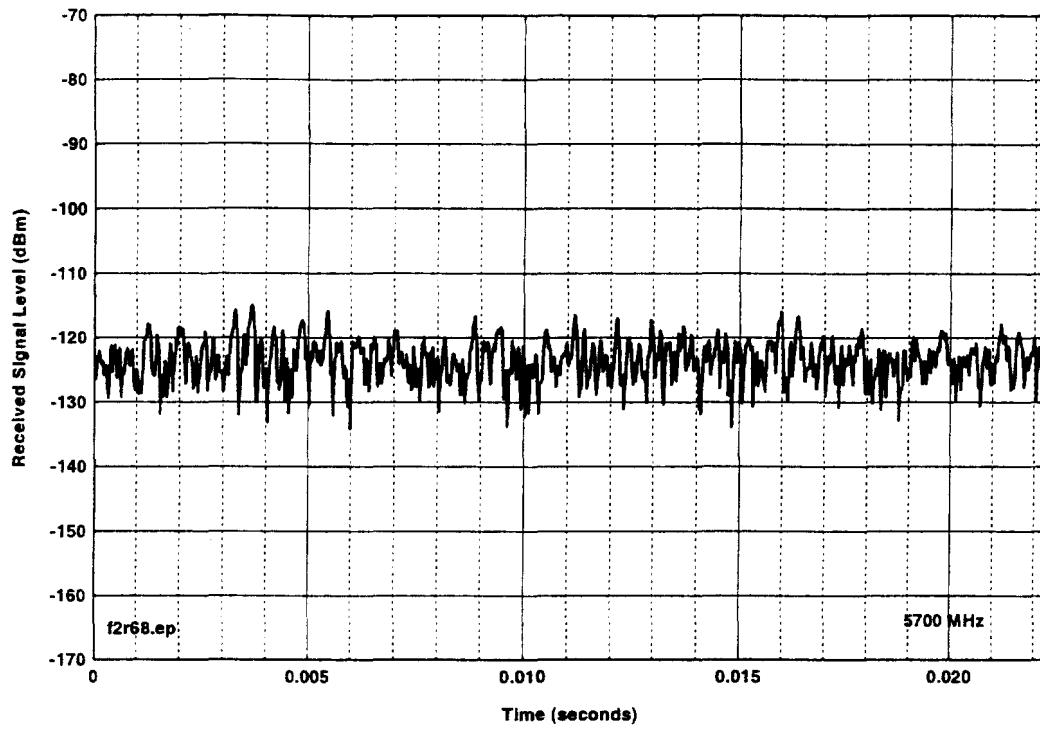


Figure D.A.15. Device A, peak emission in 3-kHz IF bandwidth.

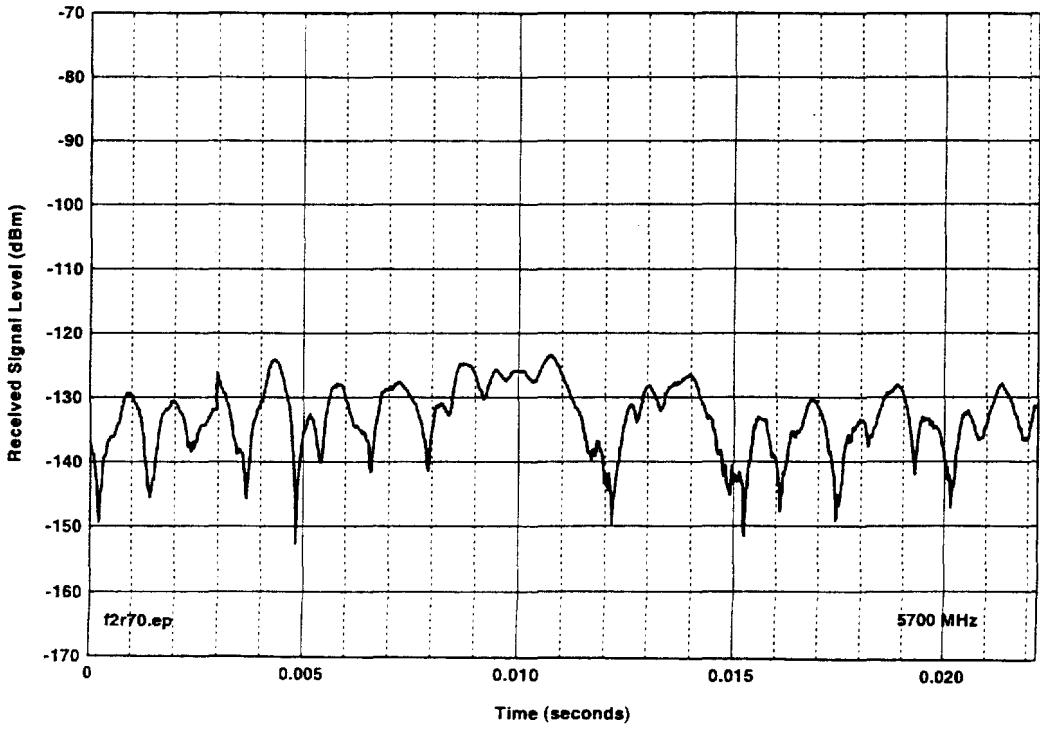


Figure D.A.16. Device A, peak emission in 1-kHz IF bandwidth.

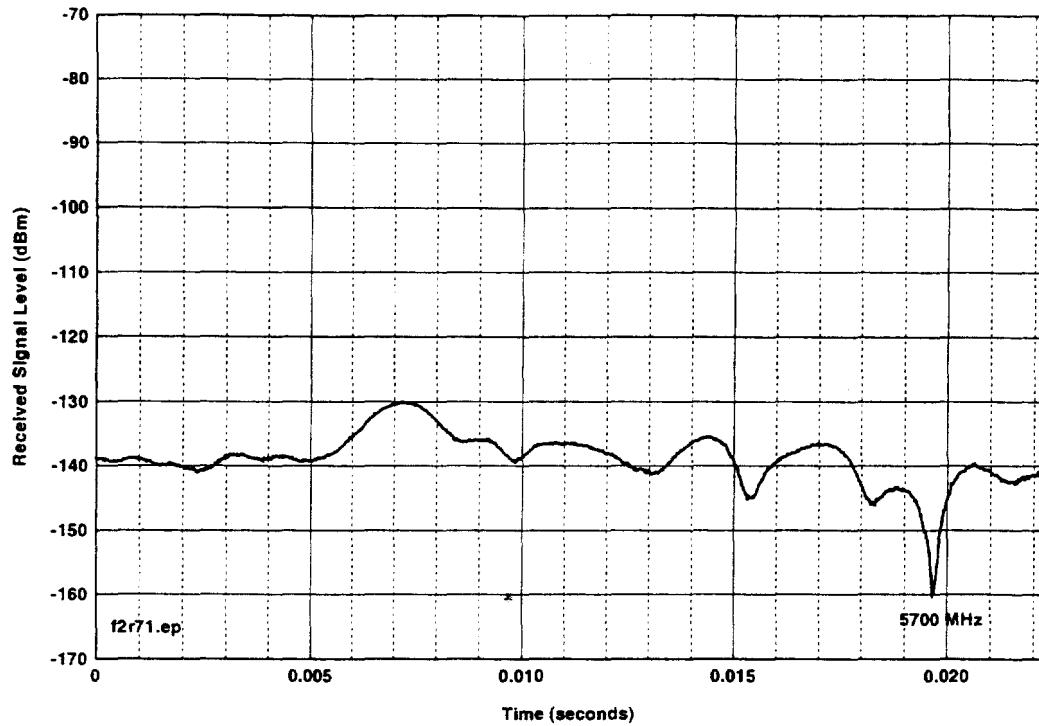


Figure D.A.17. Device A, peak emission in 300-Hz IF bandwidth.

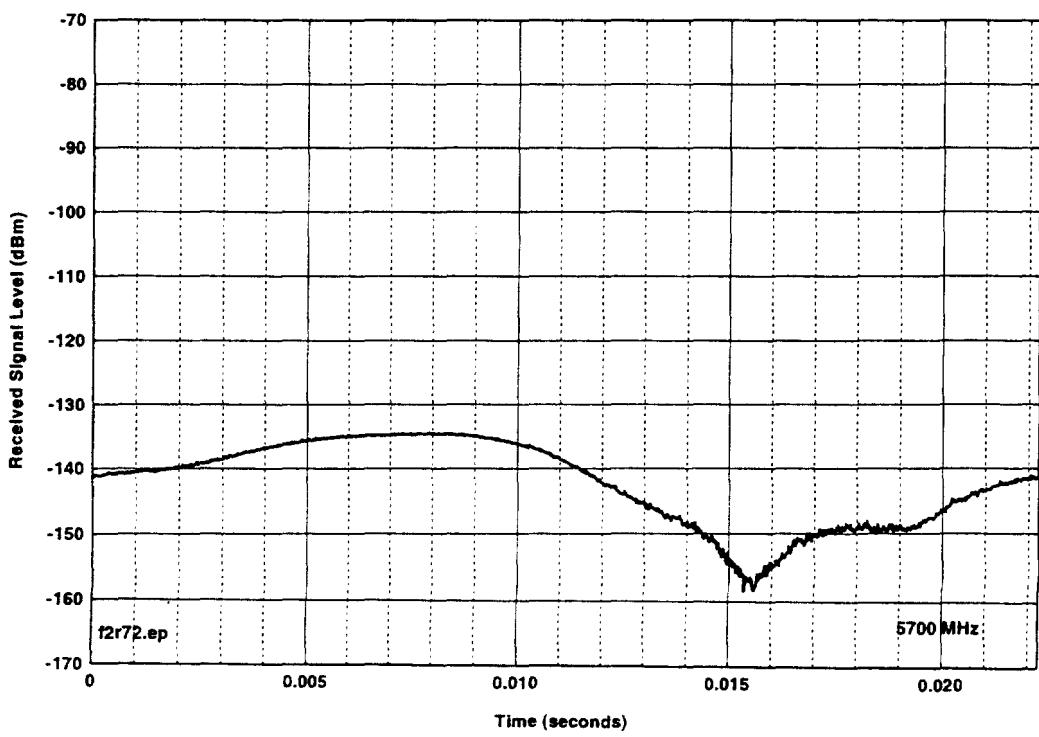


Figure D.A.18. Device A, peak emission in 100-Hz IF bandwidth.

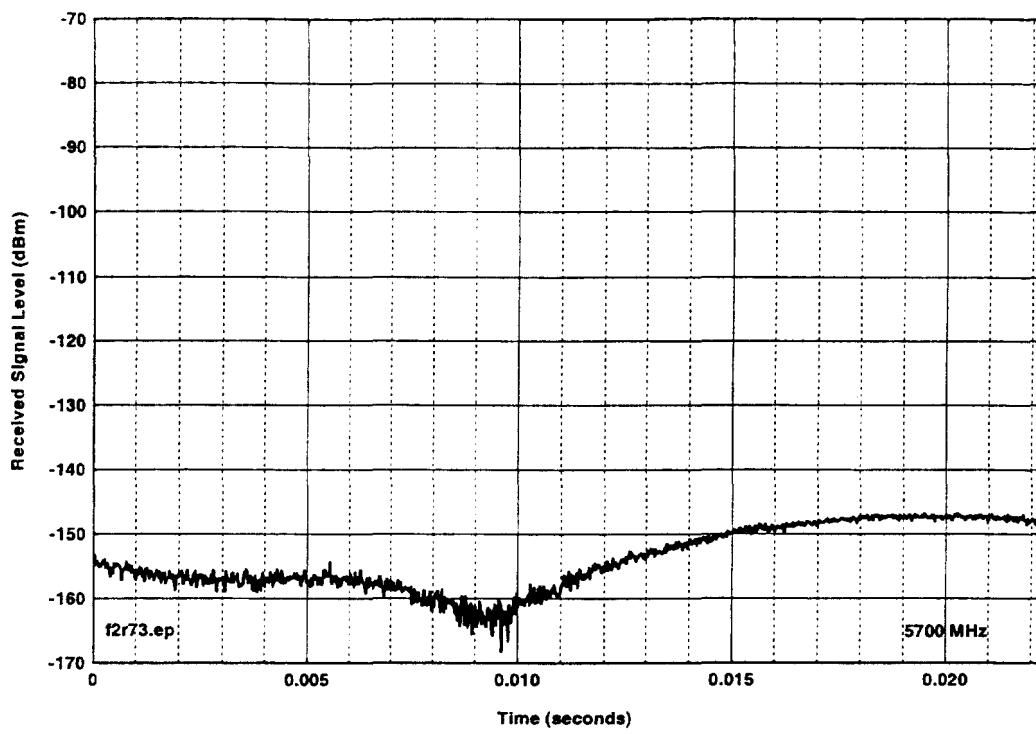


Figure D.A.19. Device A, peak emission in 30-Hz IF bandwidth.

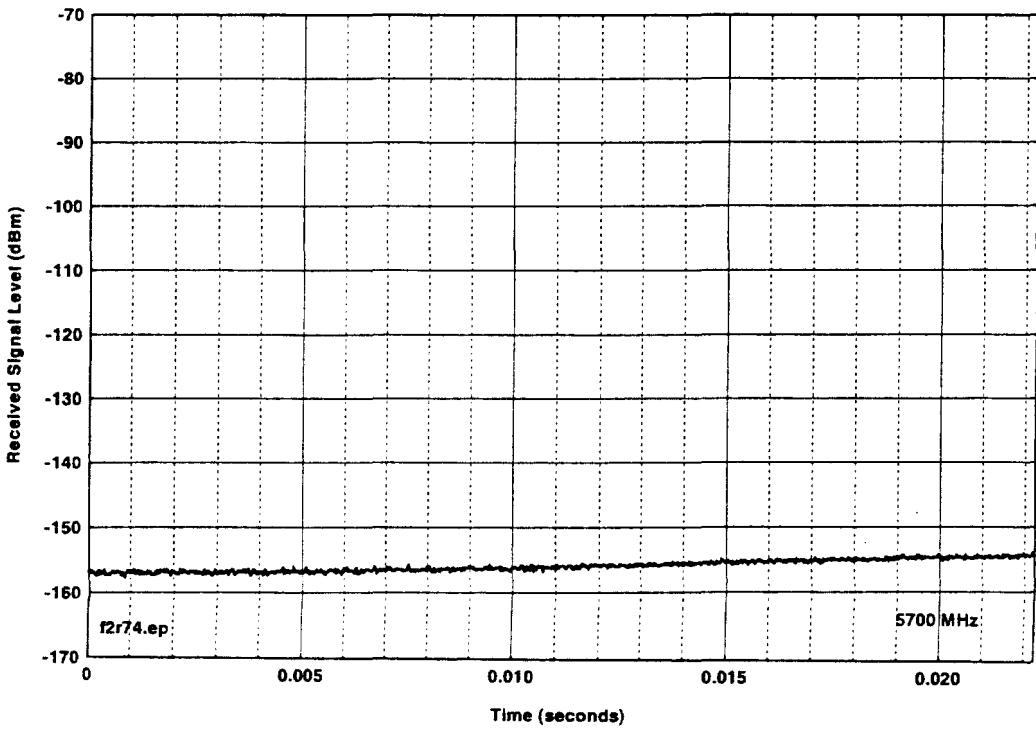


Figure D.A.20. Device A, peak emission in 10-Hz IF bandwidth.

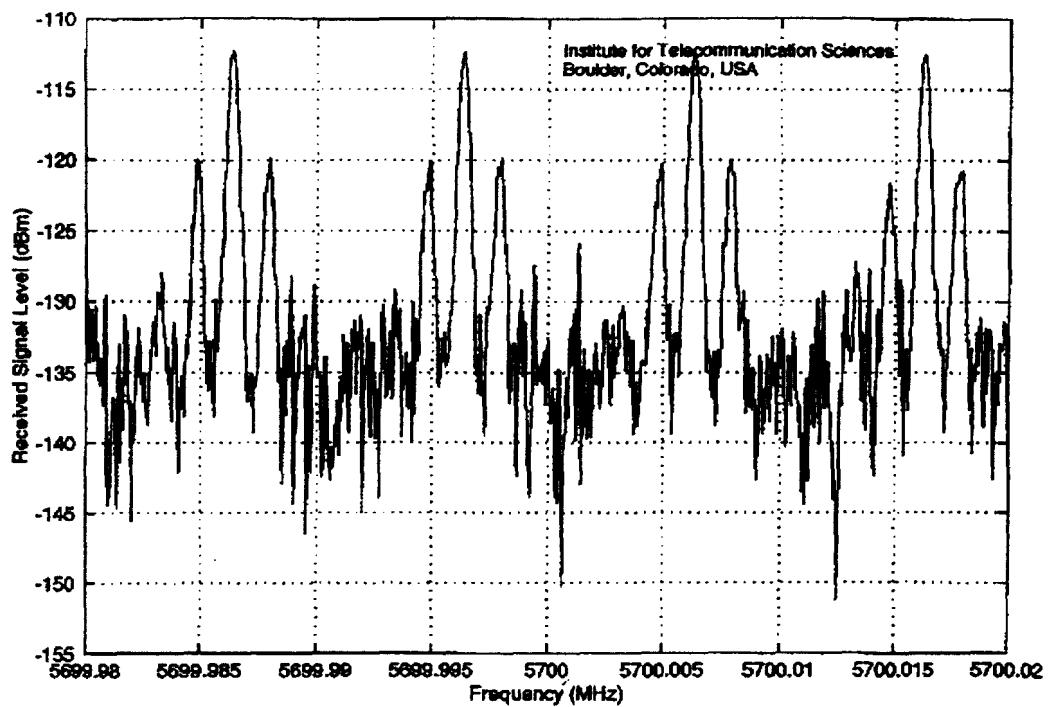


Figure D.A.21. Device A, spectrum fine structure.

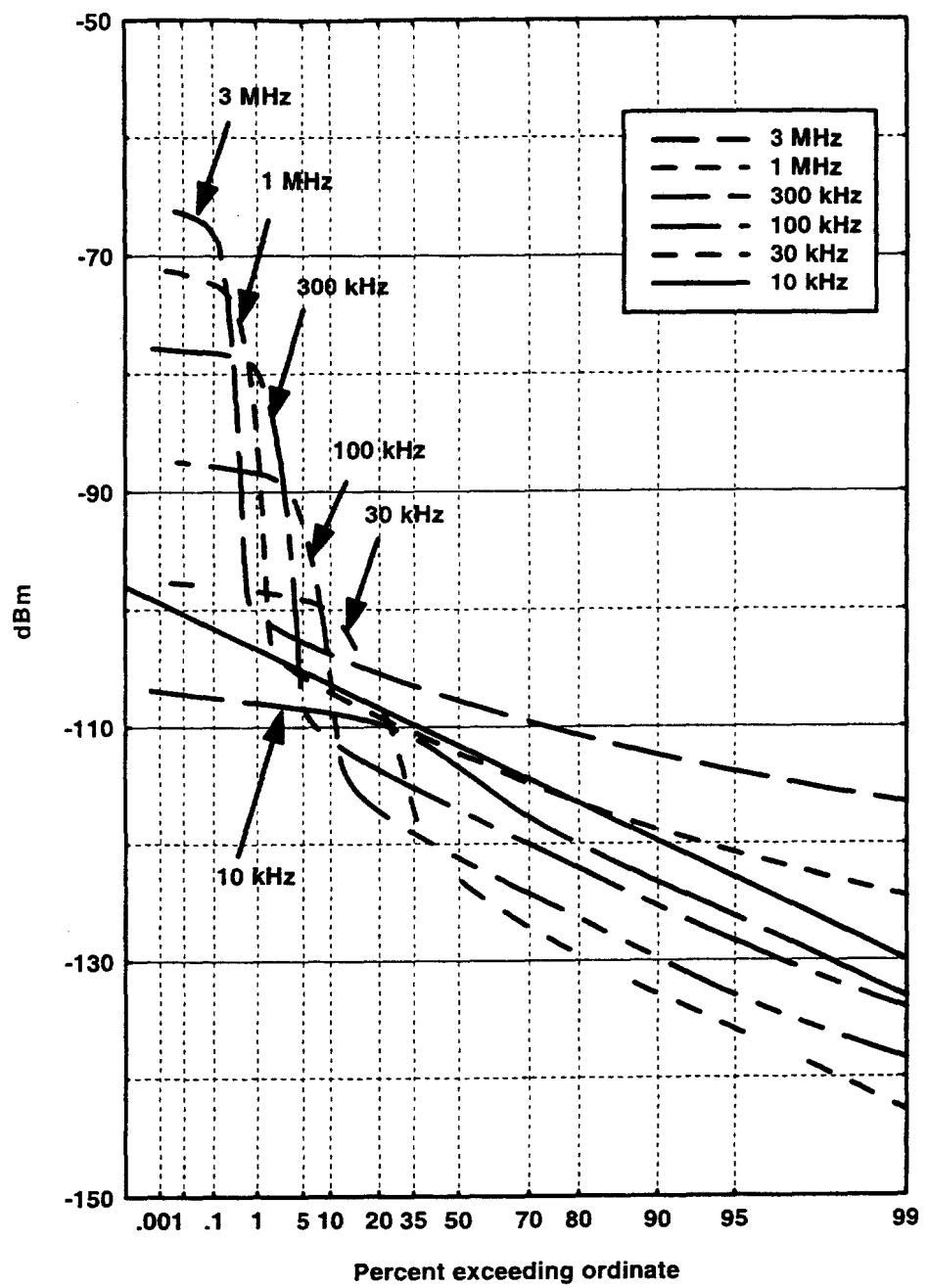


Figure D.A.22. Device A, APDs.

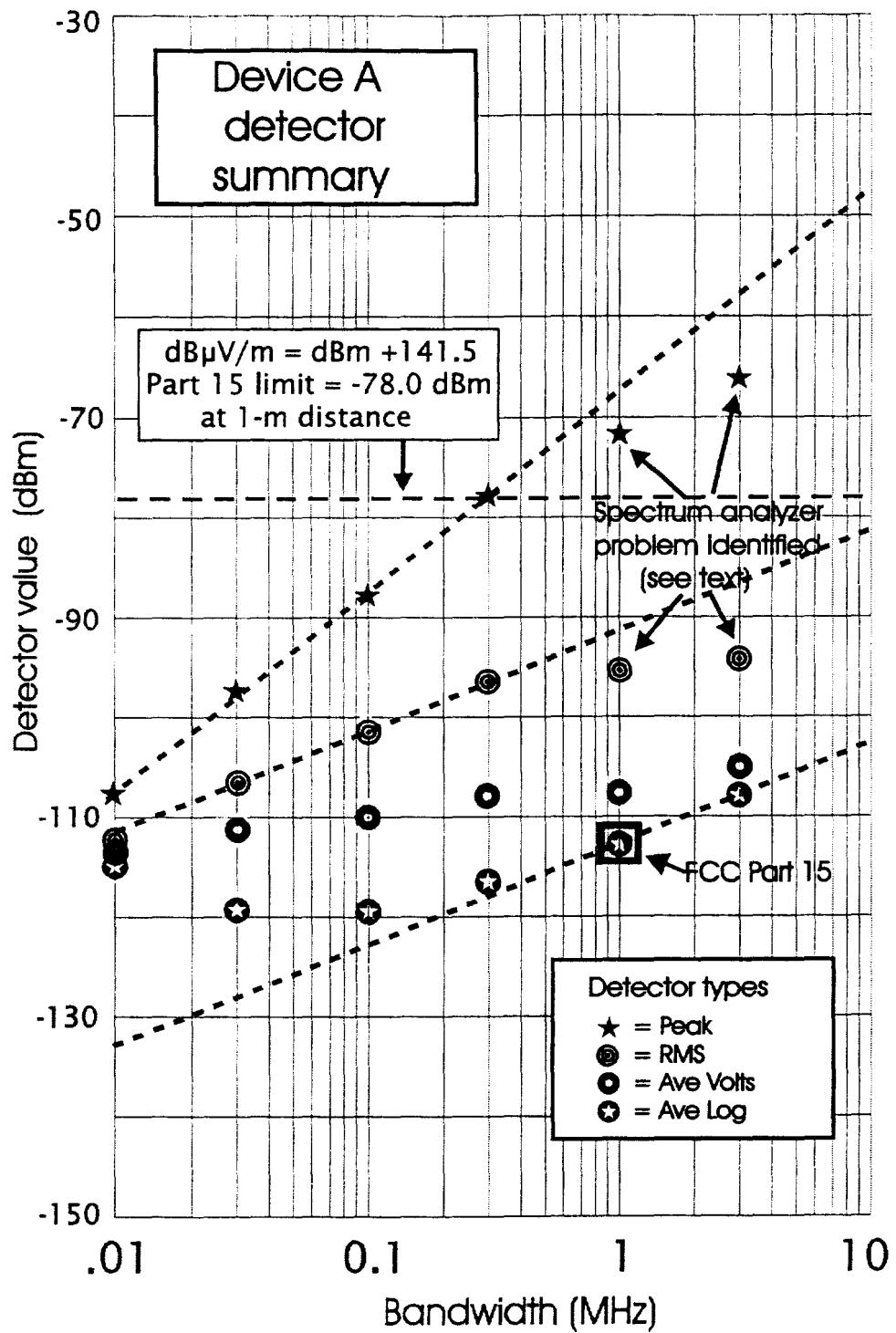


Figure D.A.23. Device A, detector summary.

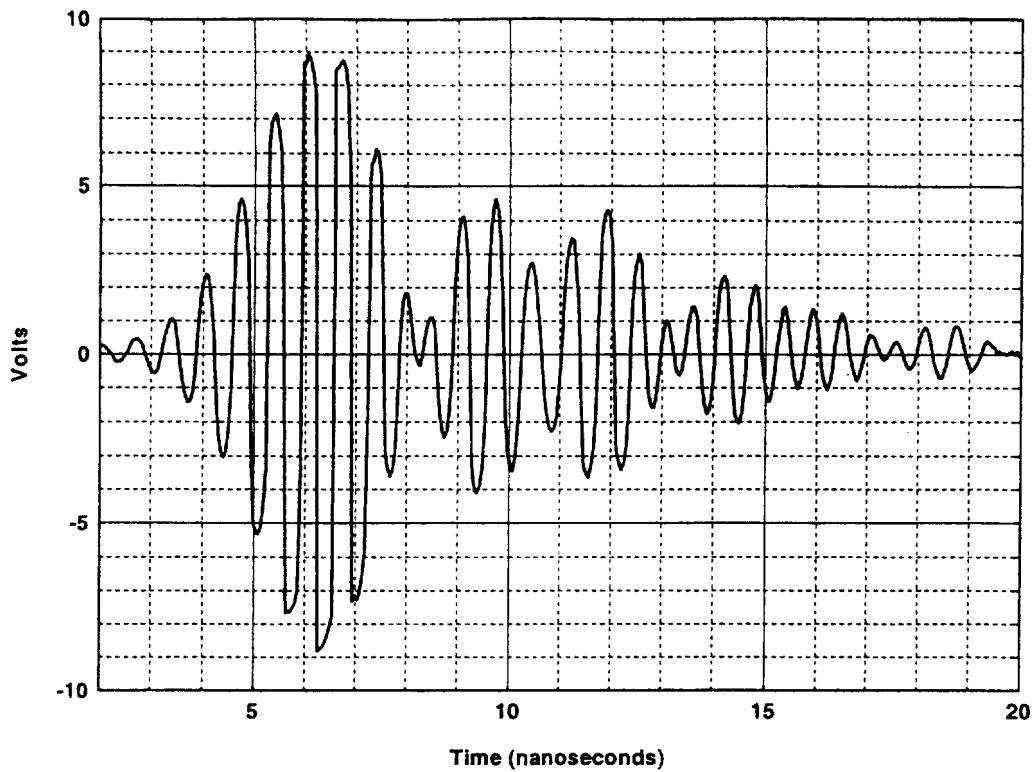


Figure D.B.1. Device B, conducted time-domain waveform.

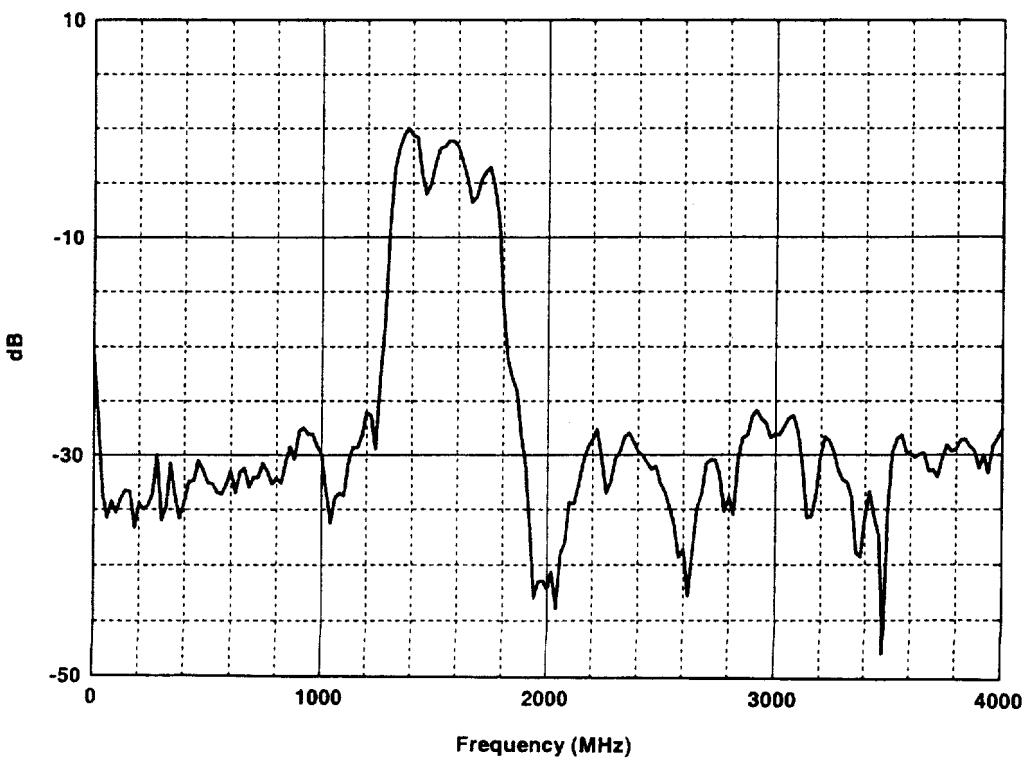


Figure D.B.2. Device B, conducted power spectrum,  $\Delta f = 20$  MHz.

D-B-1

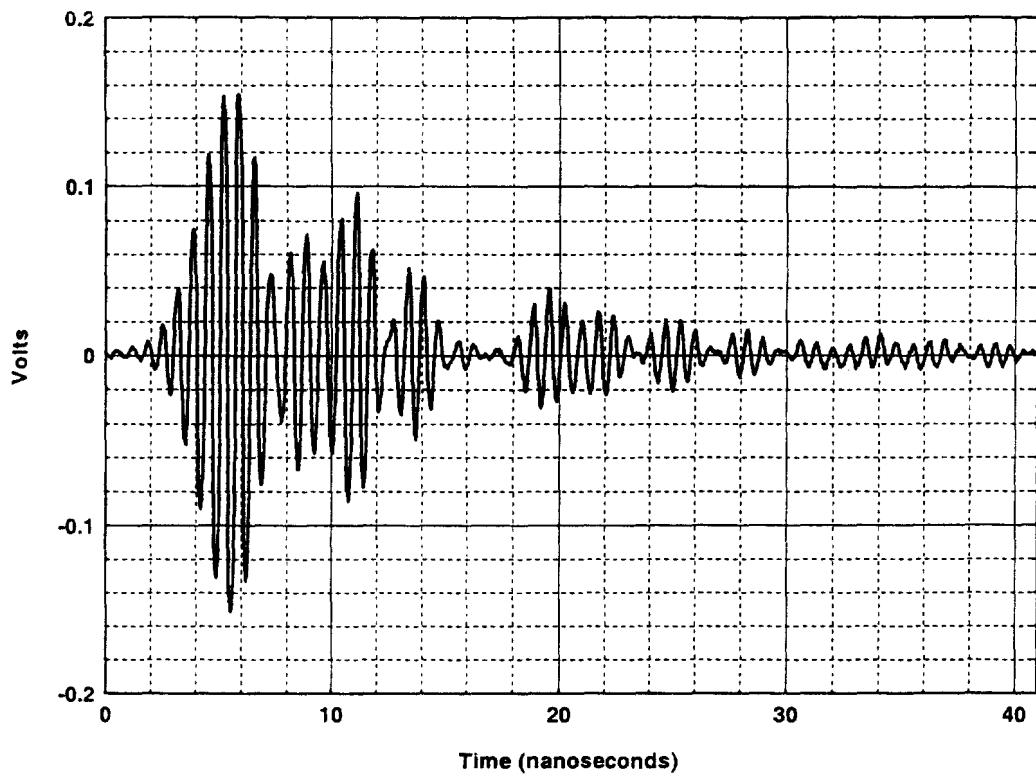


Figure D.B.3. Device B, radiated time-domain waveform.

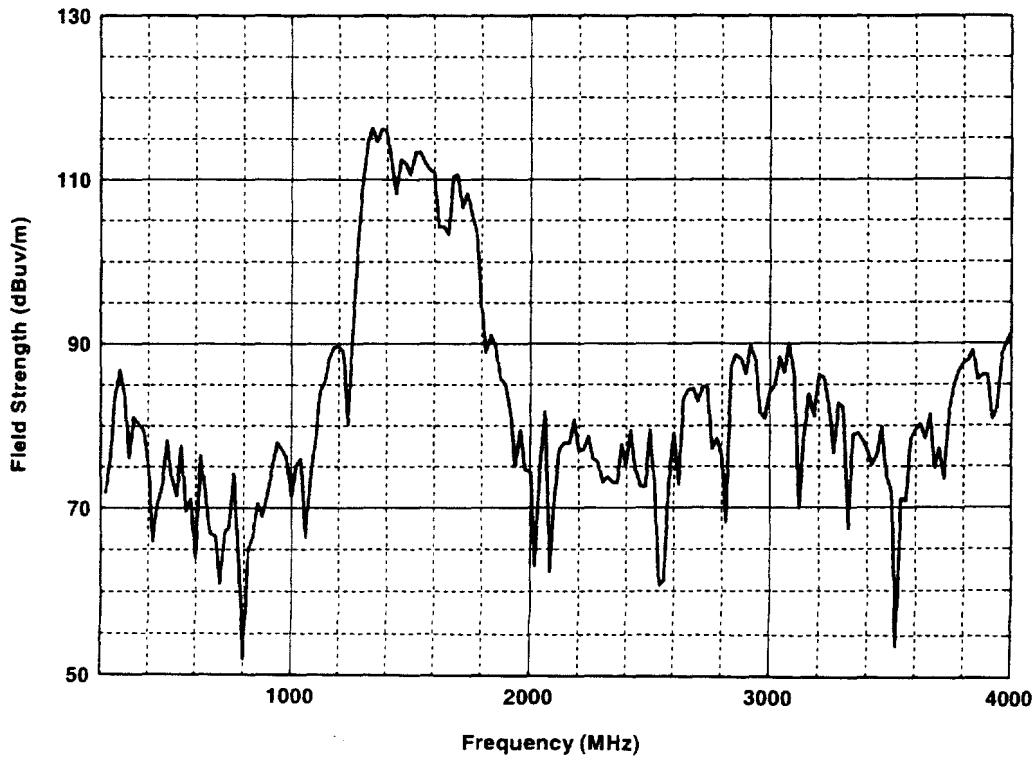


Figure D.B.4. Device B, radiated peak field strength at 1 m,  $\Delta f = 20$  MHz.

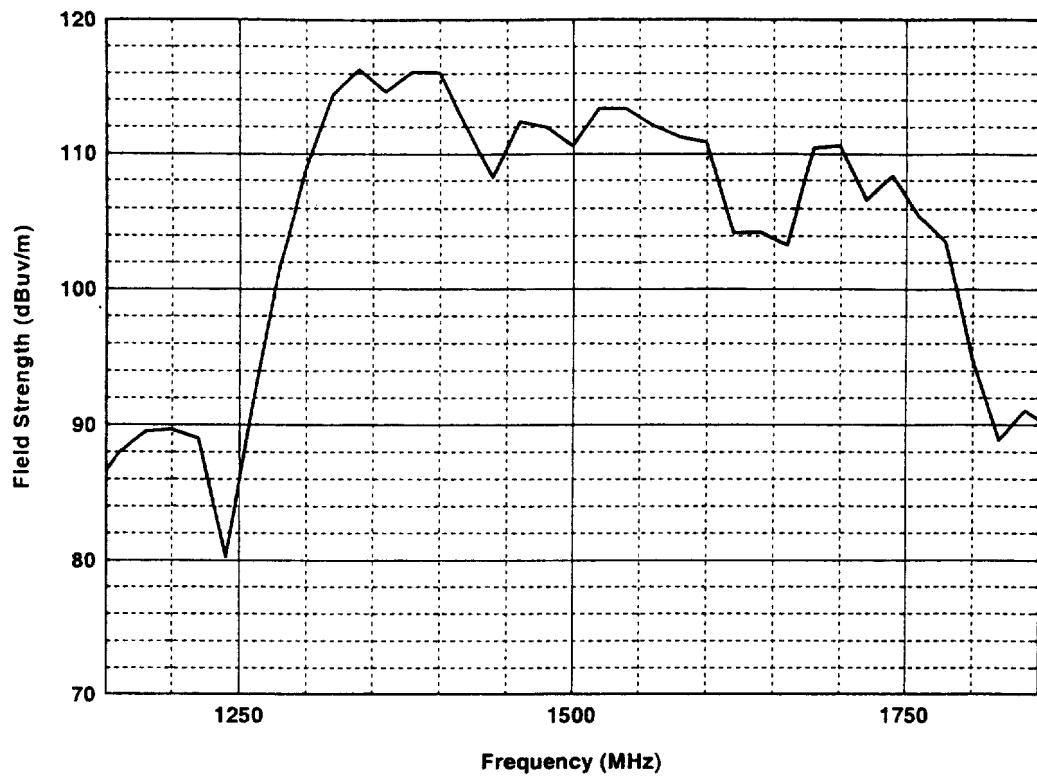


Figure D.B.5. Device B, radiated peak field strength at 1 m,  $\Delta f = 20$  MHz.

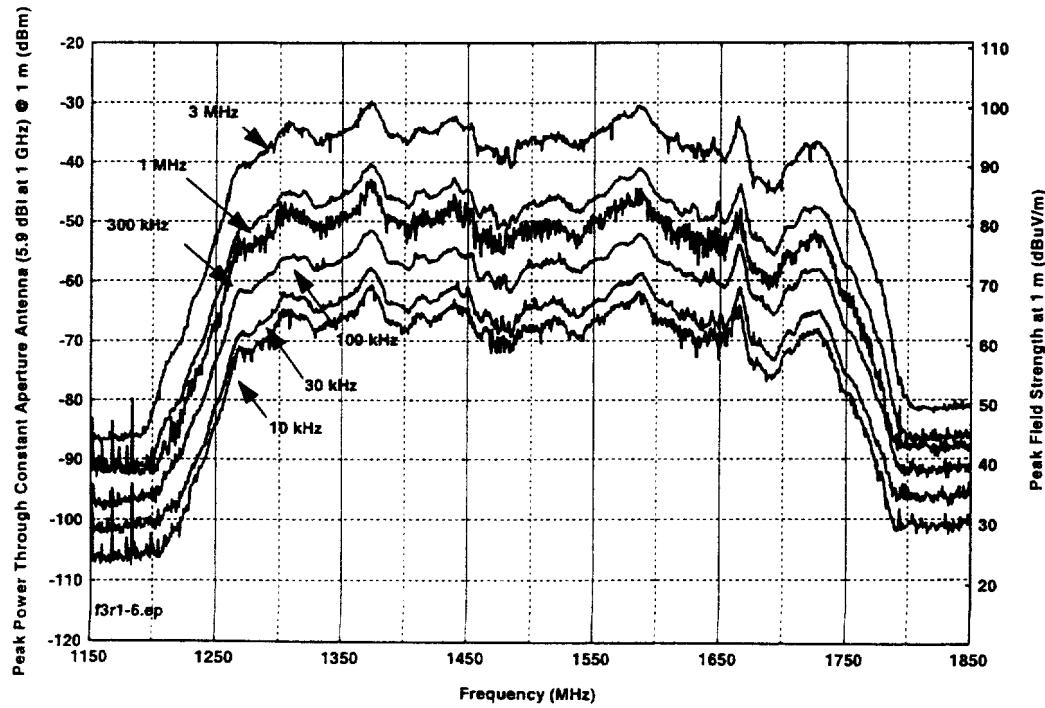


Figure D.B.6. Device B, spectra as a function of bandwidth, 16-kB/s voice mode.

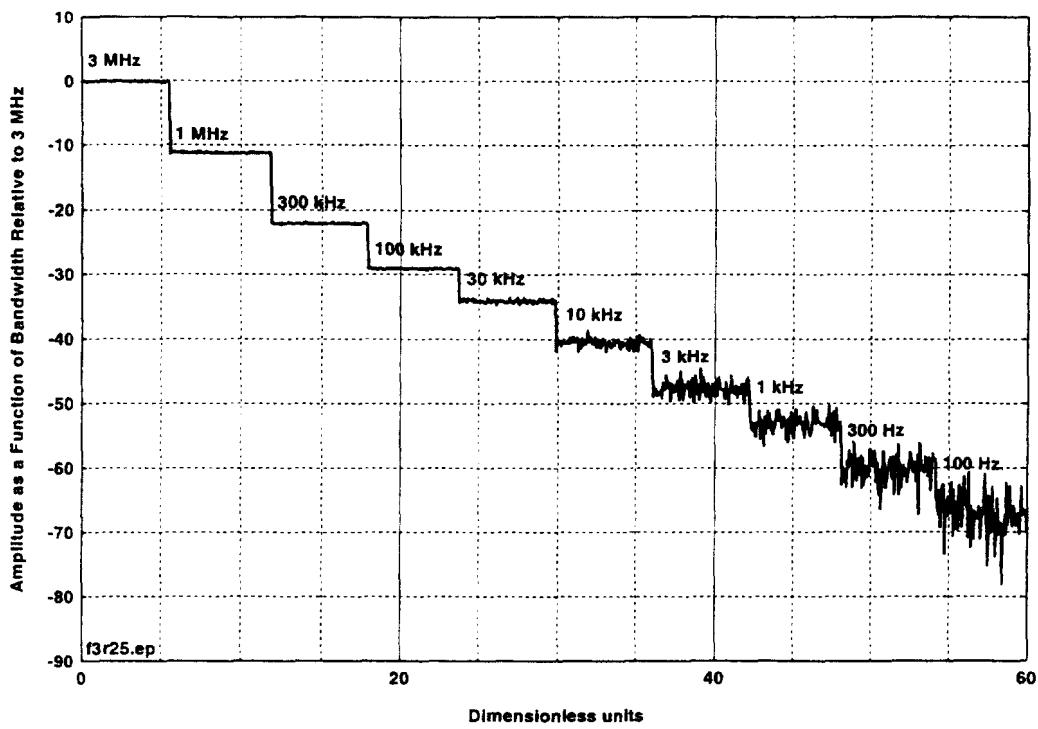


Figure D.B.7. Device B, in 16-kB/sec voice mode, bandwidth progression  
stairstep.

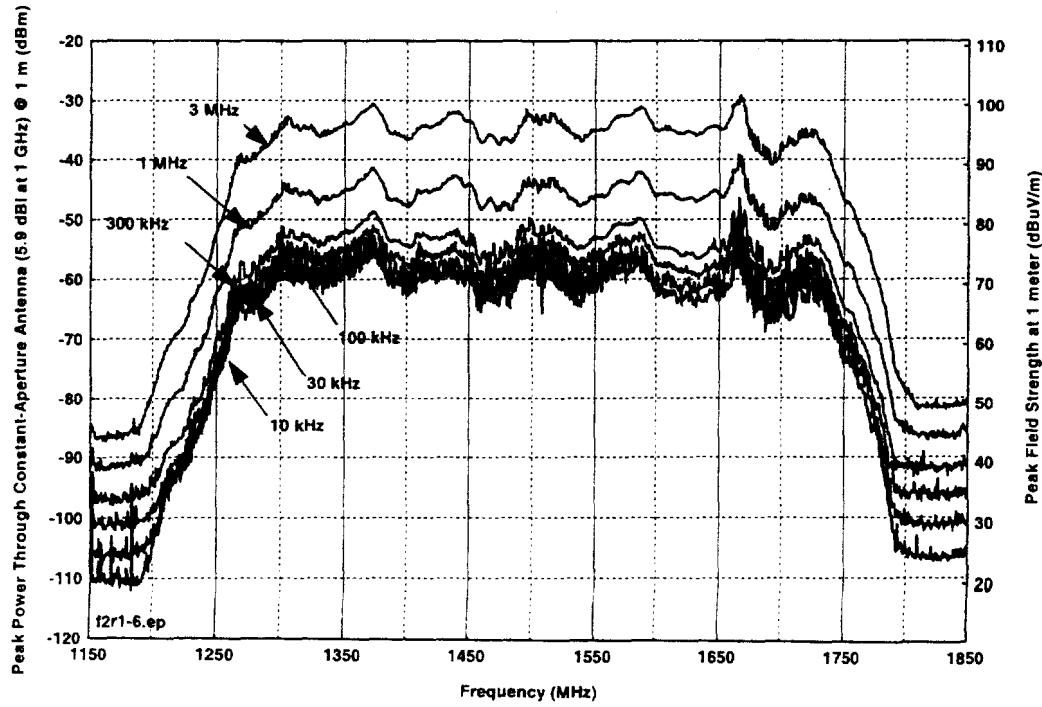


Figure D.B.8. Device B, spectra as a function of bandwidth, 128-kB/sec  
voice mode.

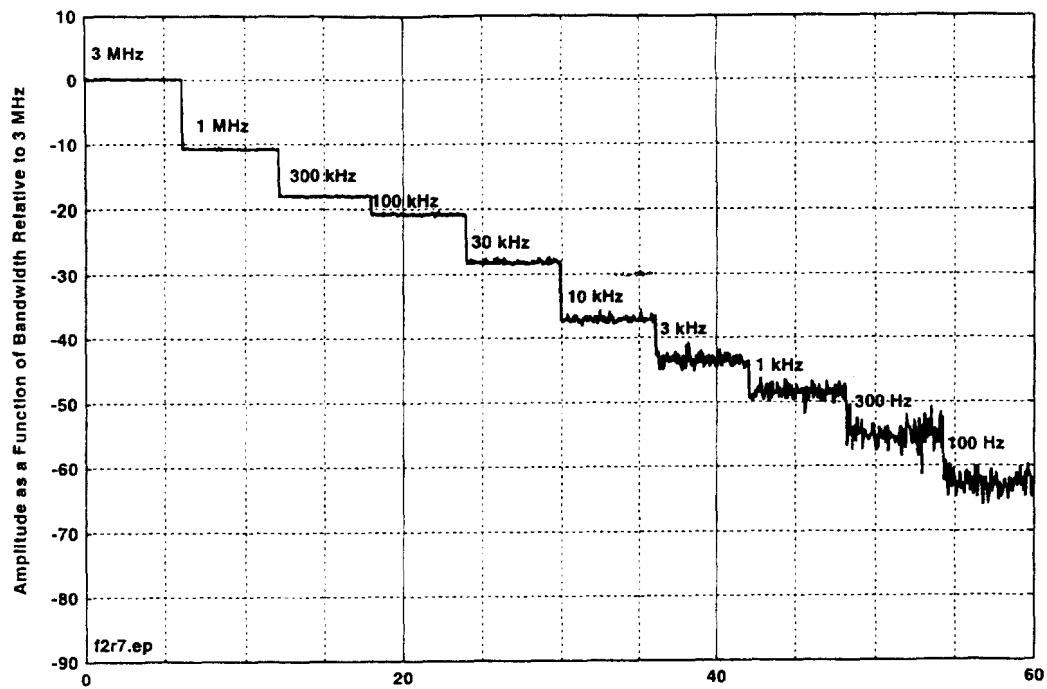


Figure D.B.9. Device B, in 128-kB/sec voice mode, bandwidth progression stairstep.

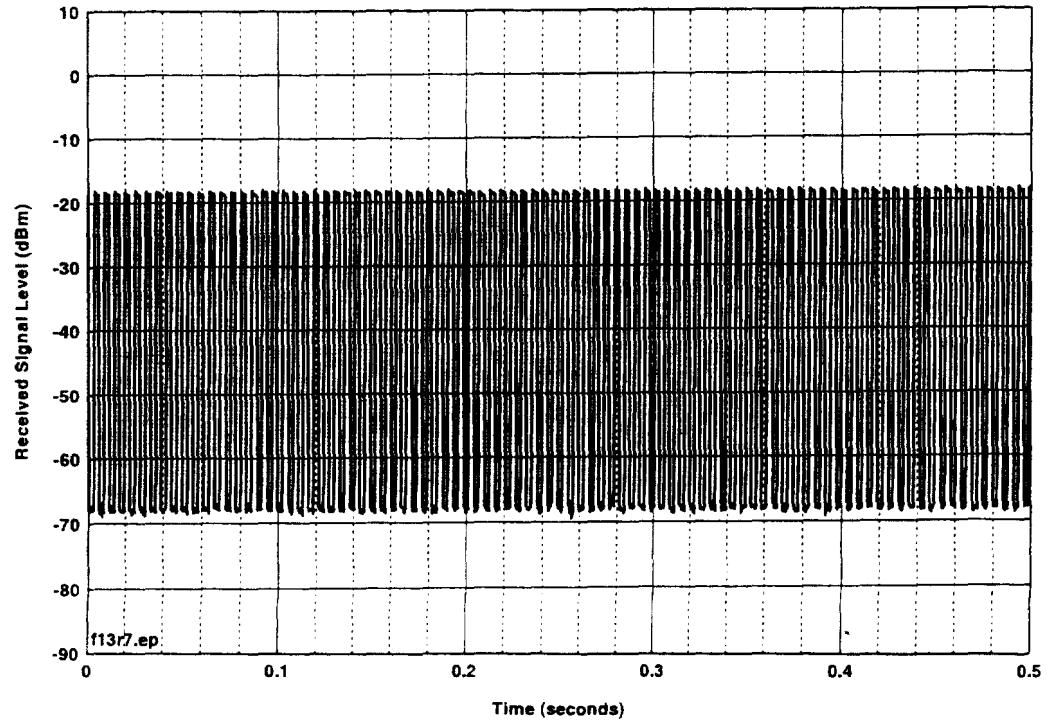


Figure D.B.10. Device B, 0.5 seconds, 128-kBit/sec mode.

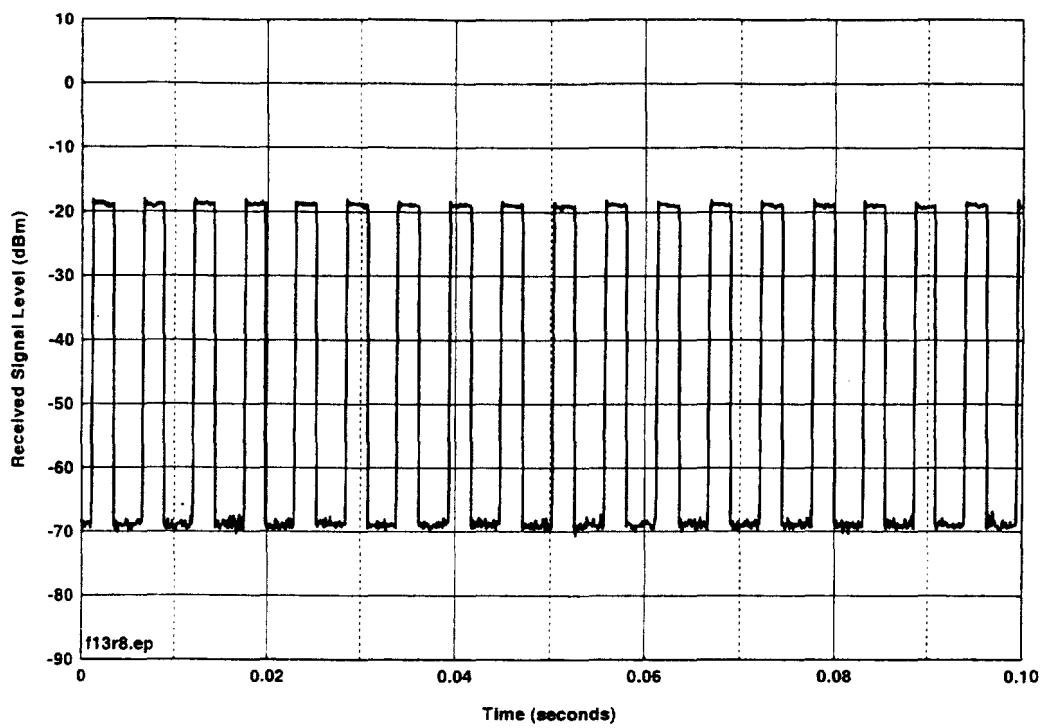


Figure D.B.11. Device B, 128-kBit/sec mode, 0.1 seconds.

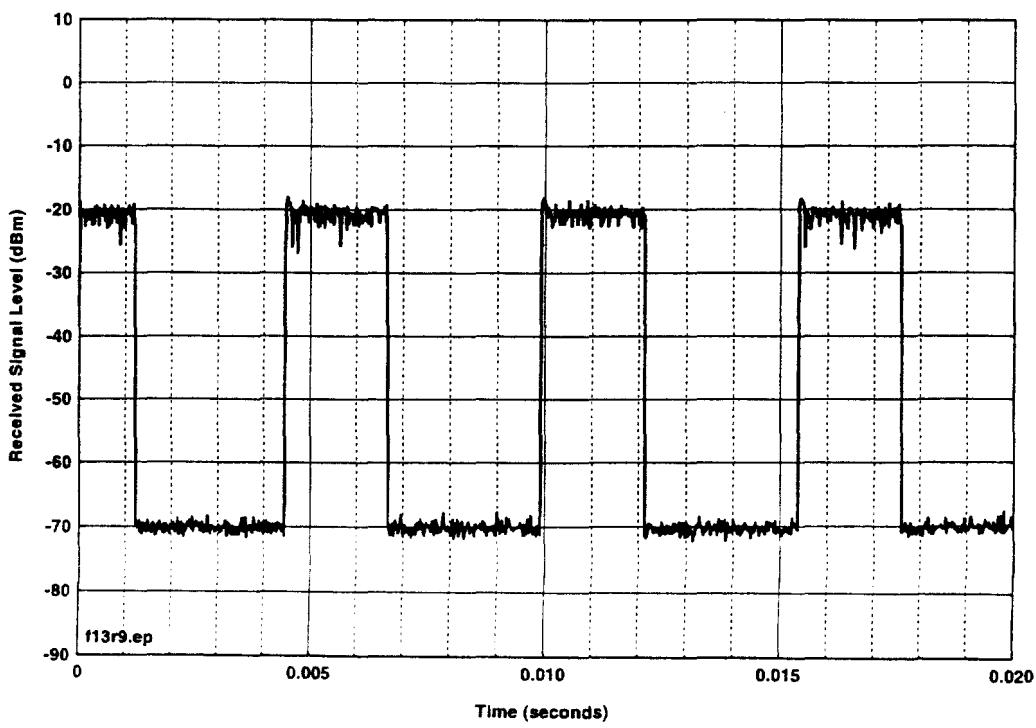


Figure D.B.12. Device B, 128-kBit/second mode, 0.02 seconds.

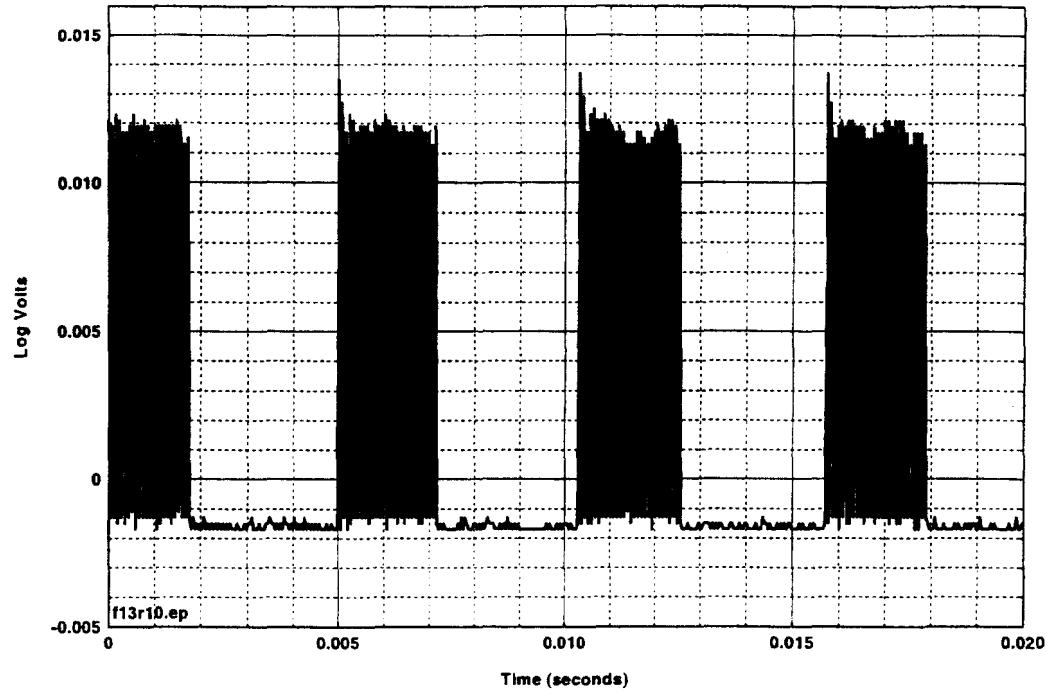


Figure D.B.13. Device B, 128-kBit/second mode, 0.02 seconds, external log detector.

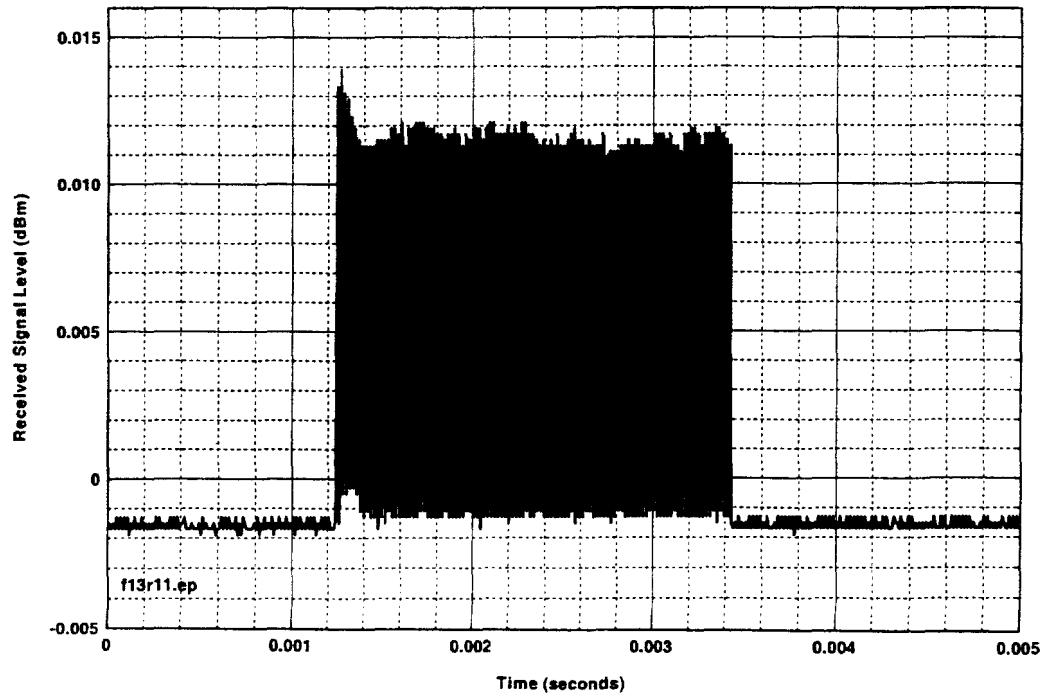


Figure D.B.14. Device B, 128-kBit/second mode, 0.005 seconds, external detector.

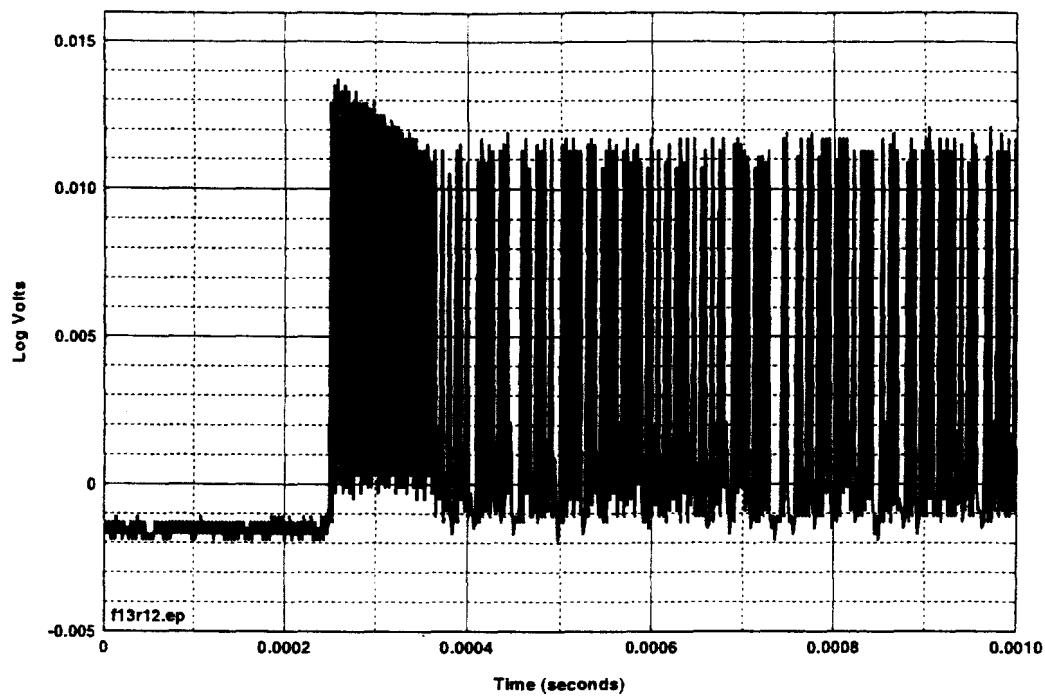


Figure D.B.15. Device B, 128-kBit/second mode, 0.001 seconds, external log detector.

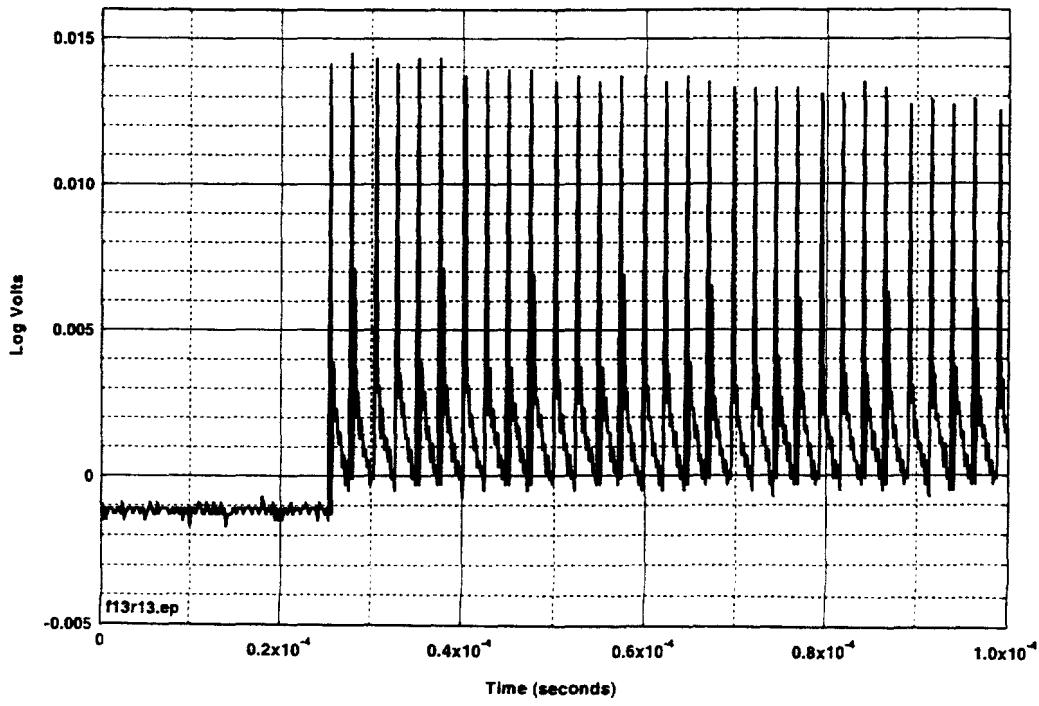


Figure D.B.16. Device B, 128-kBit/second mode, 0.1 msec, external log detector.

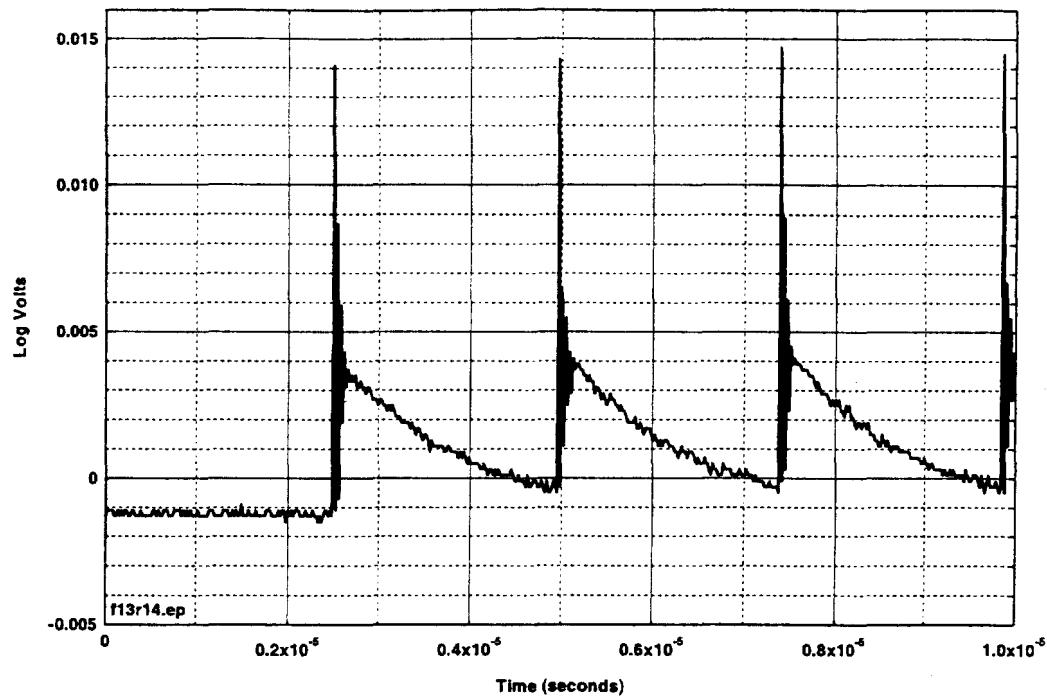


Figure D.B.17. Device B, 128-kBit/second mode, 10 us, external log detector.

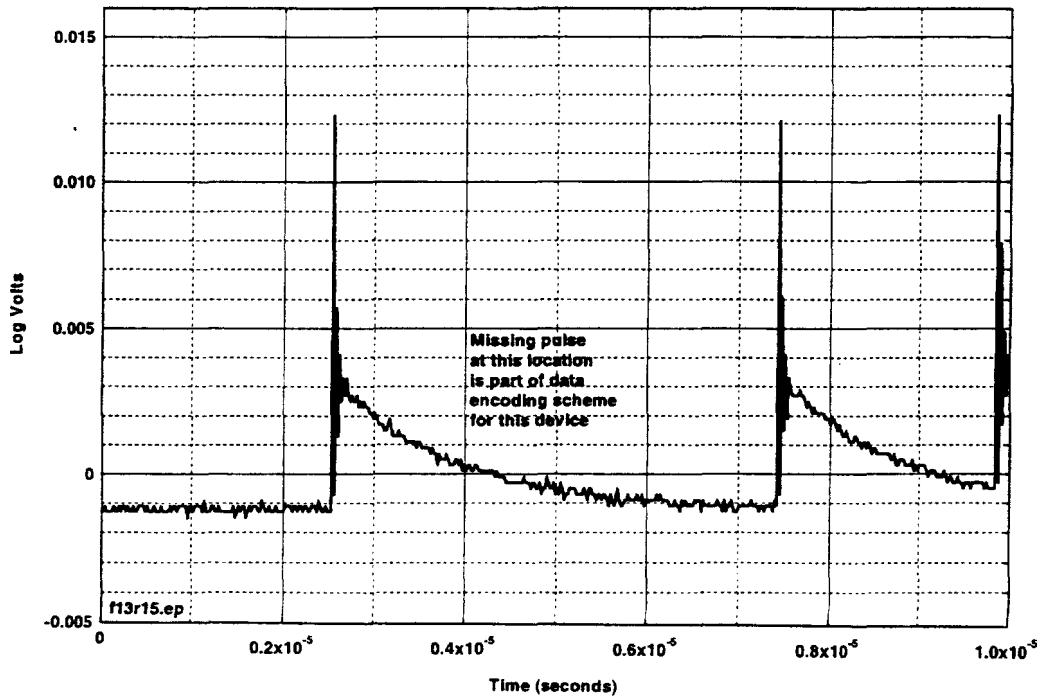


Figure D.B.18. Device B, 128-kBit/second mode, 10 us, external log detector.

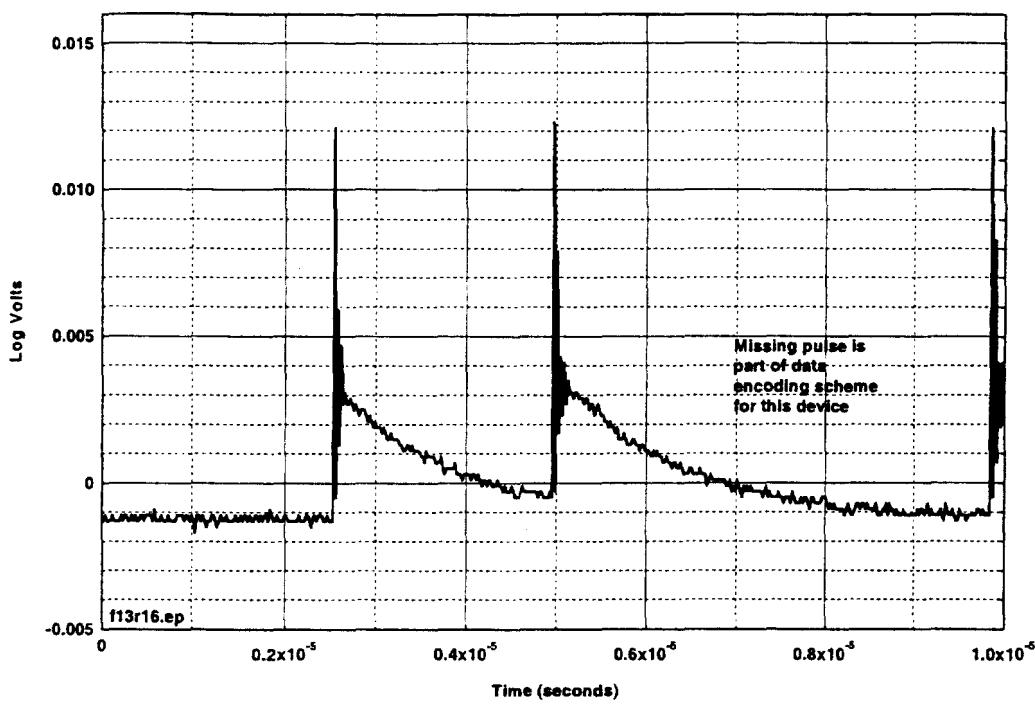


Figure D.B.19. Device B, 128-kBit/second mode, 10 us, external log detector.

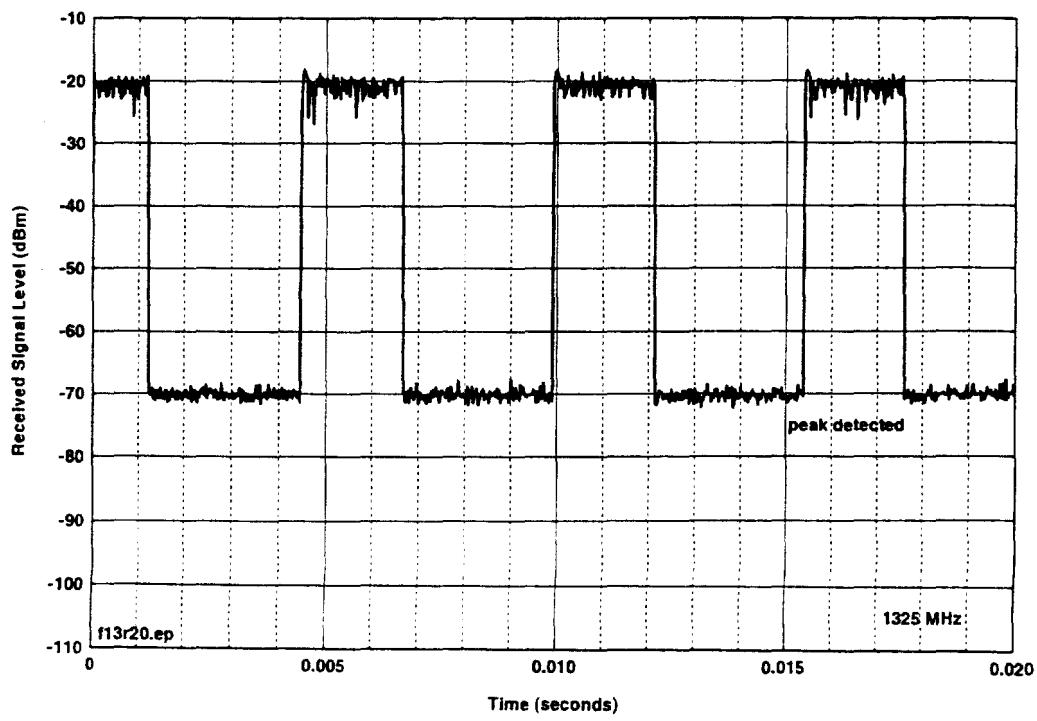


Figure D.B.20. Device B, 128-kBit/second mode, 3-MHz IF bandwidth.

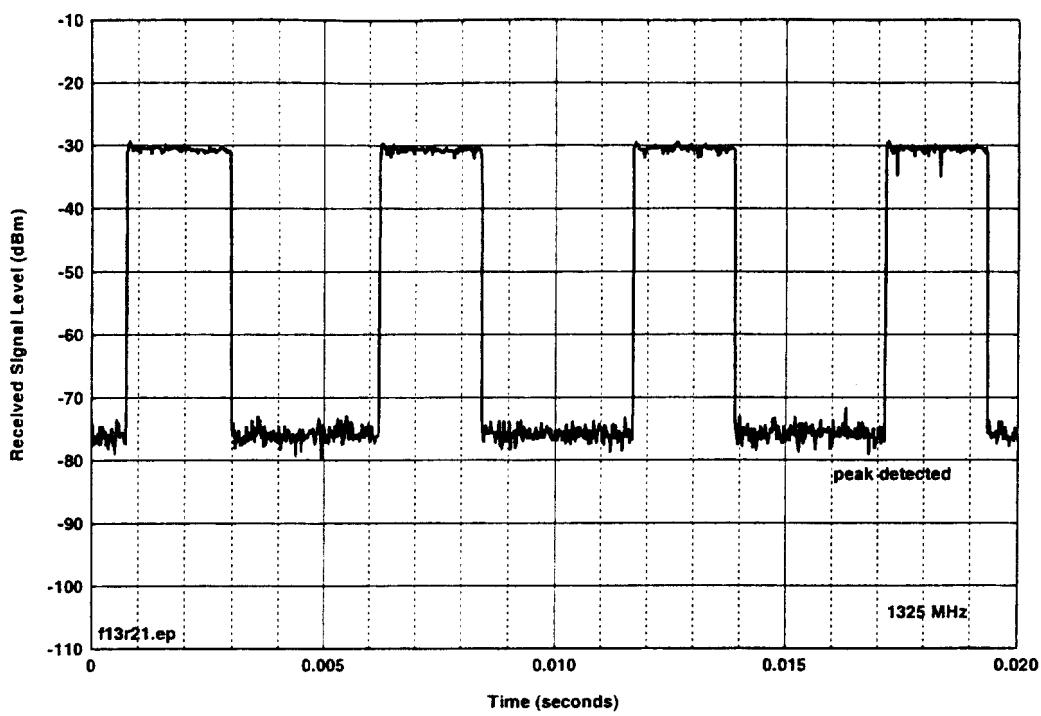


Figure D.B.21. Device B, 128-kBit/second mode, 1-MHz IF bandwidth.

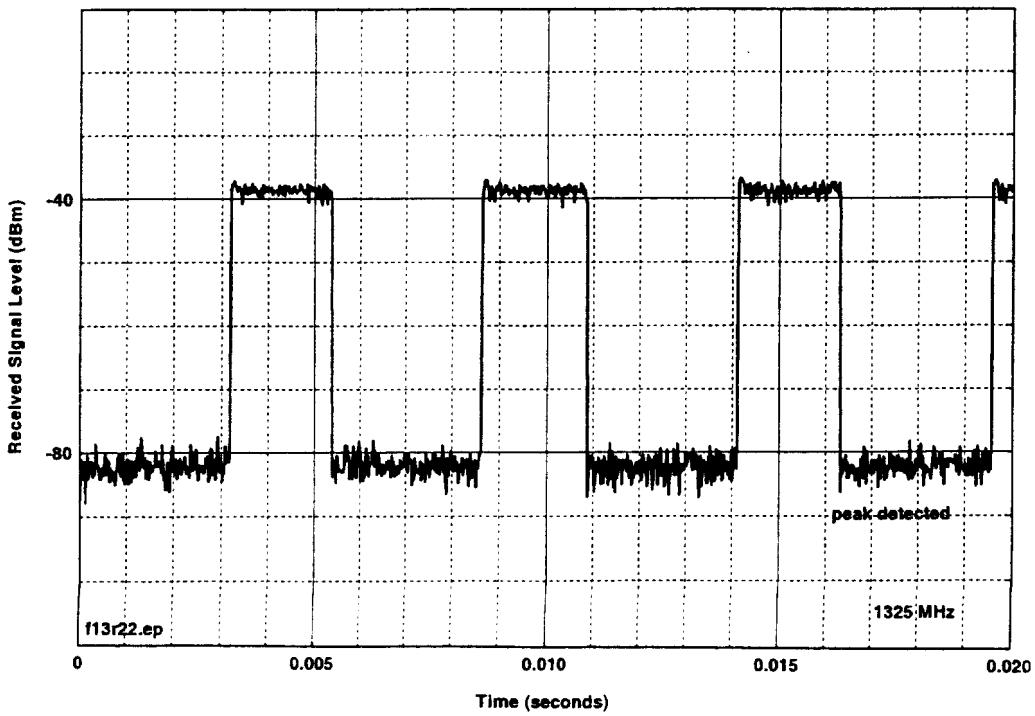


Figure D.B.22. Device B, 128-kBit/second mode, 300-kHz IF bandwidth.

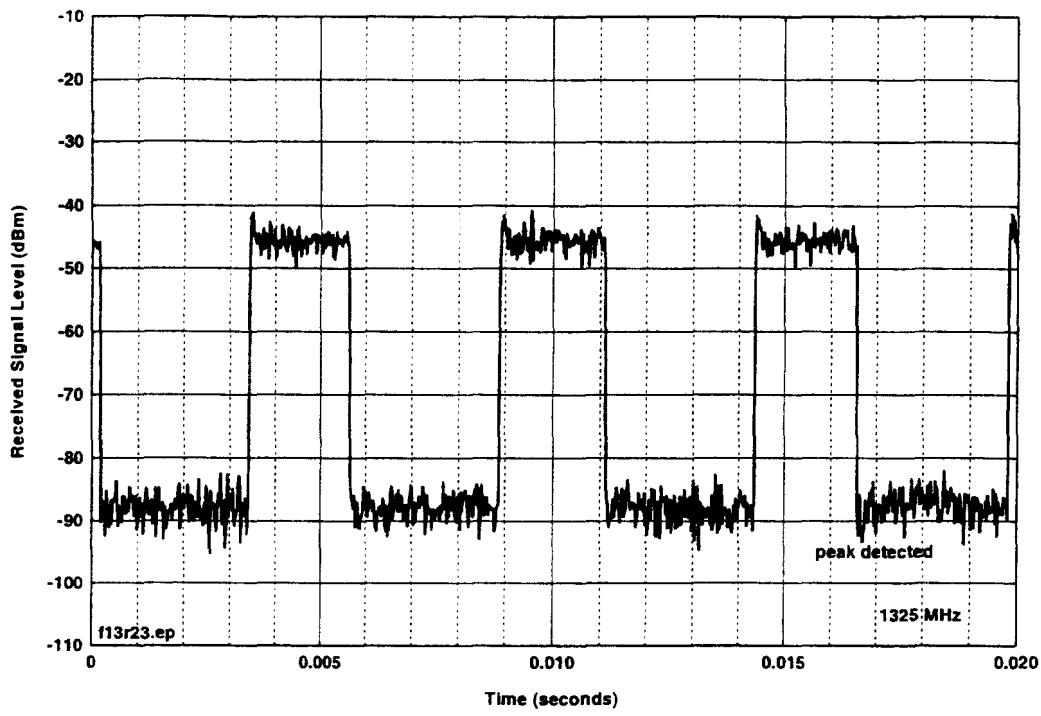


Figure D.B.23. Device B, 128-kBit/second mode, 100-kHz IF bandwidth.

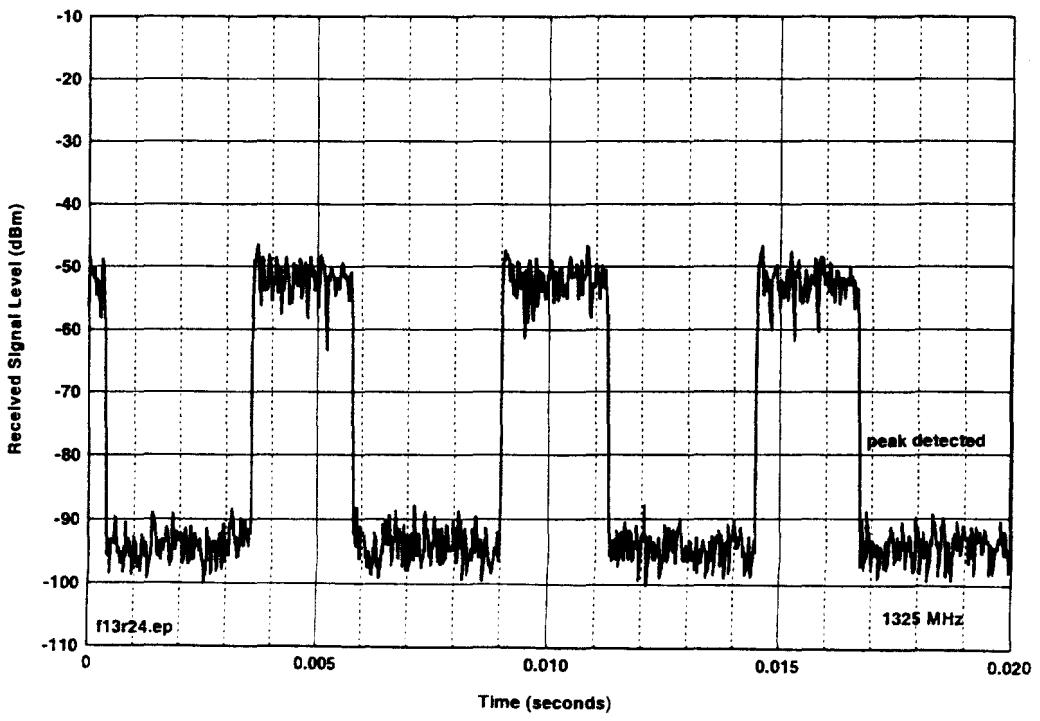


Figure D.B.24. Device B, 128-kBit/second mode, 30-kHz IF bandwidth.

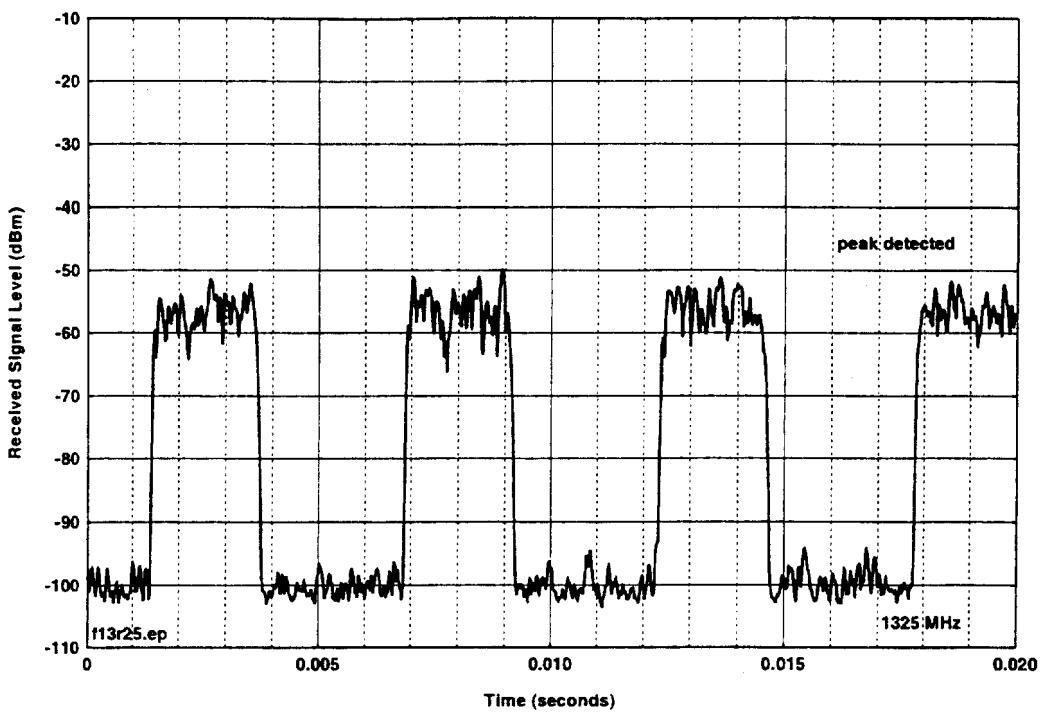


Figure D.B.25. Device B, 128-kBit/second mode, 10-kHz IF bandwidth.

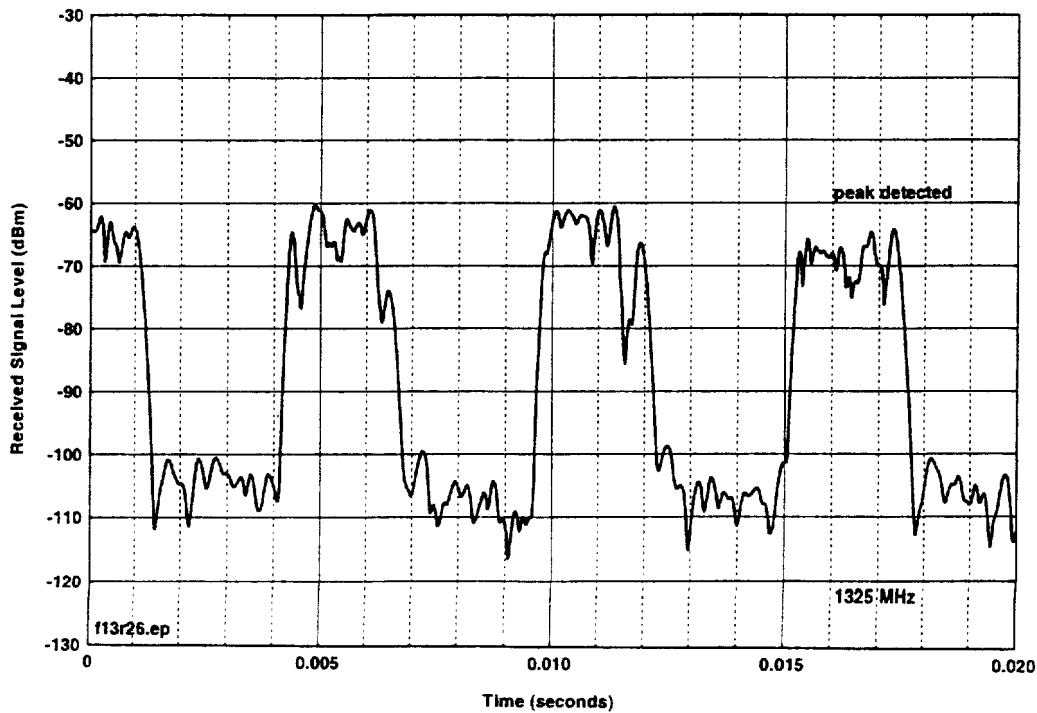


Figure D.B.26. Device B, 128-kBit/second mode, 3-kHz IF bandwidth.

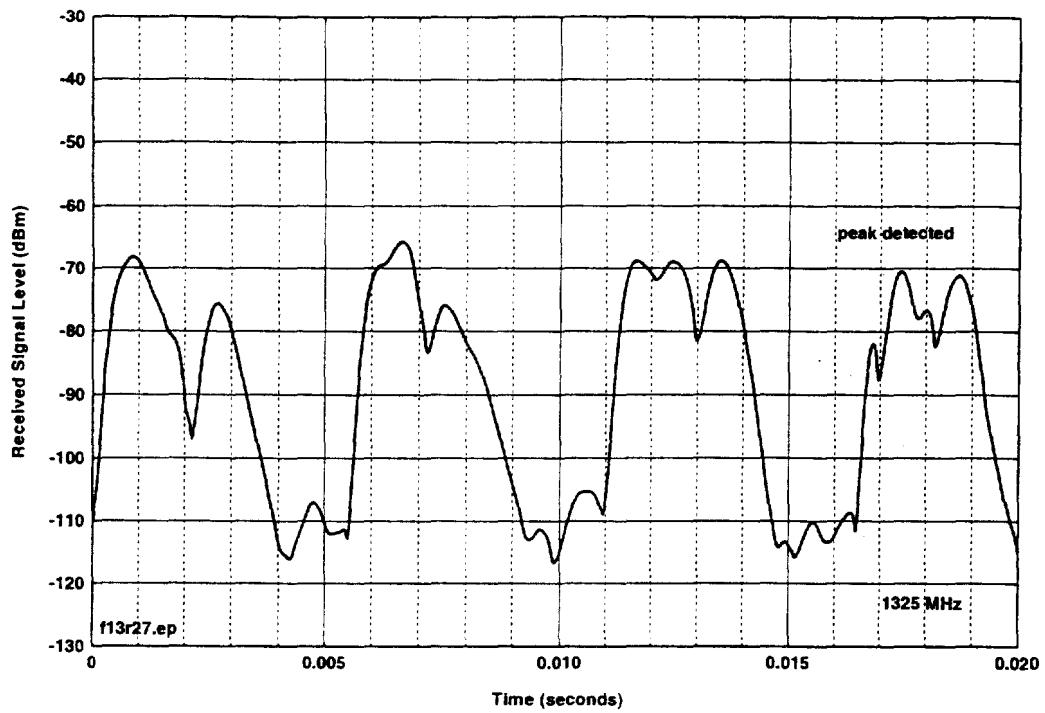


Figure D.B.27. Device B, 128-kBit/second mode, 1-kHz IF bandwidth.

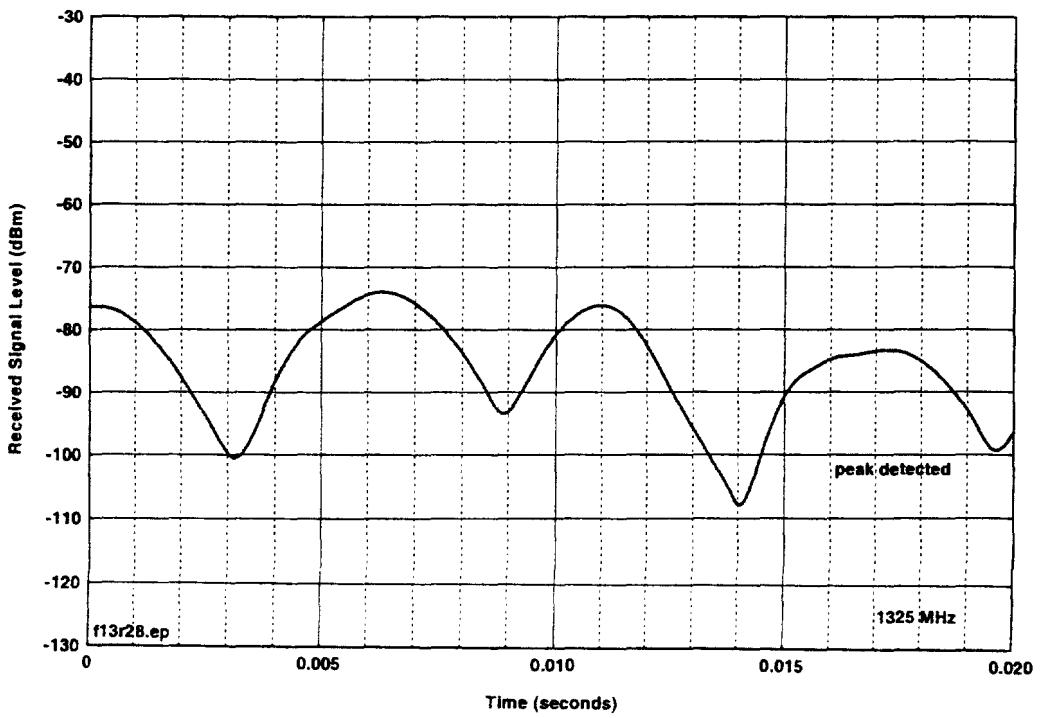


Figure D.B.28. Device B, 128-kBit/second mode, 300-Hz IF bandwidth.

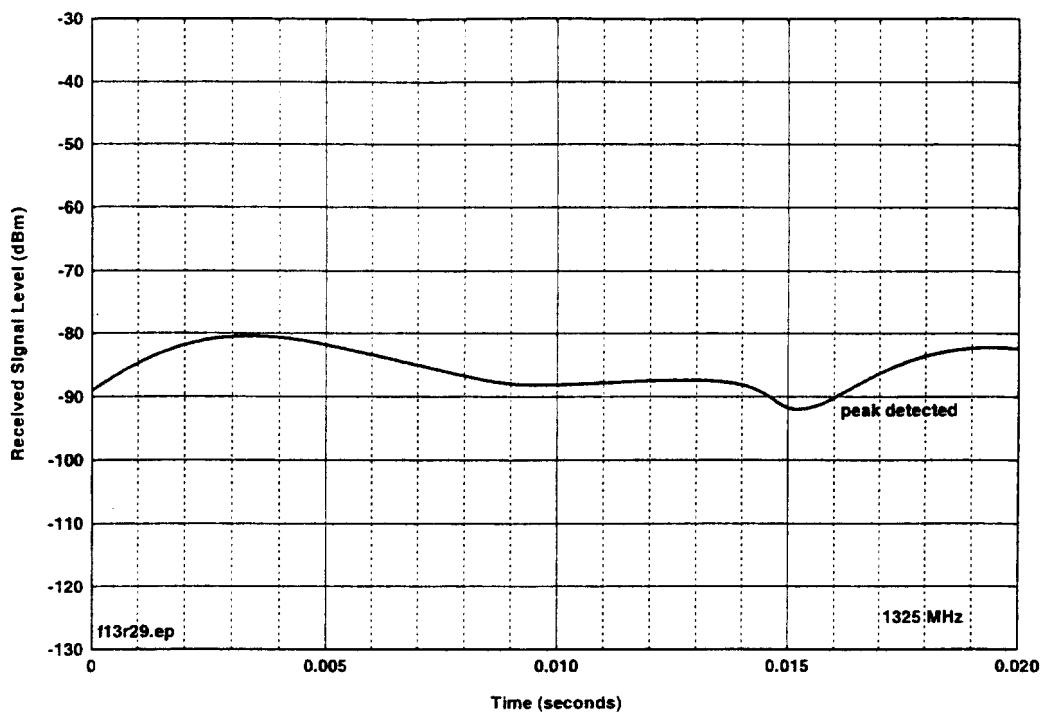


Figure D.B.29. Device B, 128-kBit/second mode, 100-Hz IF bandwidth.

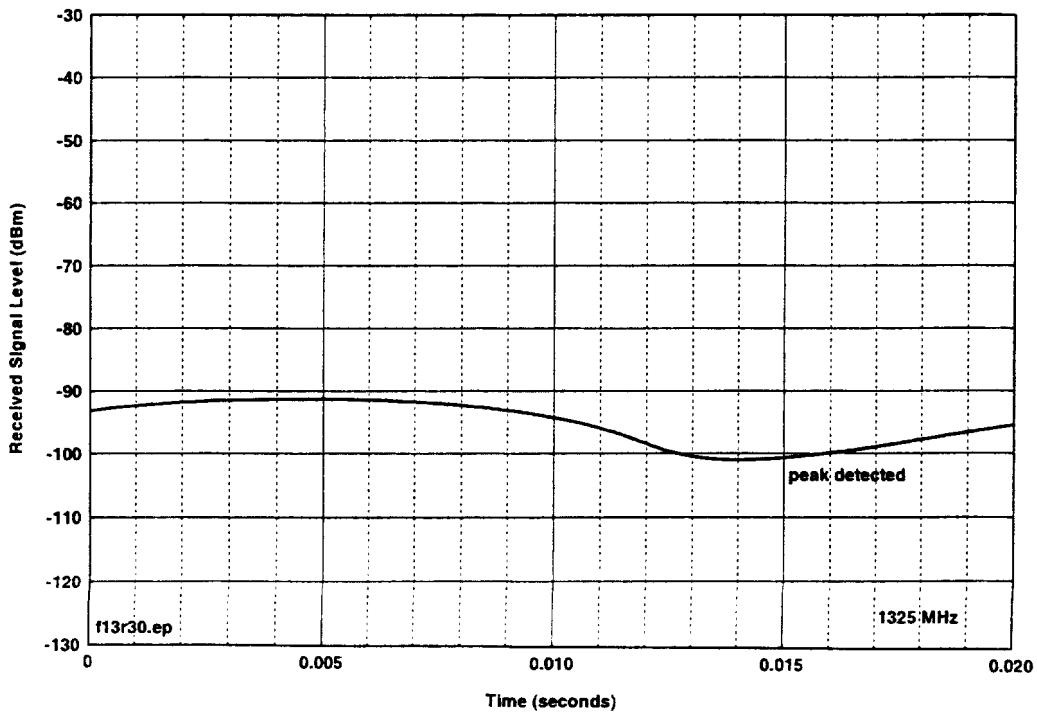


Figure D.B.30. Device B, 128-kBit/second mode, 30-Hz IF bandwidth.

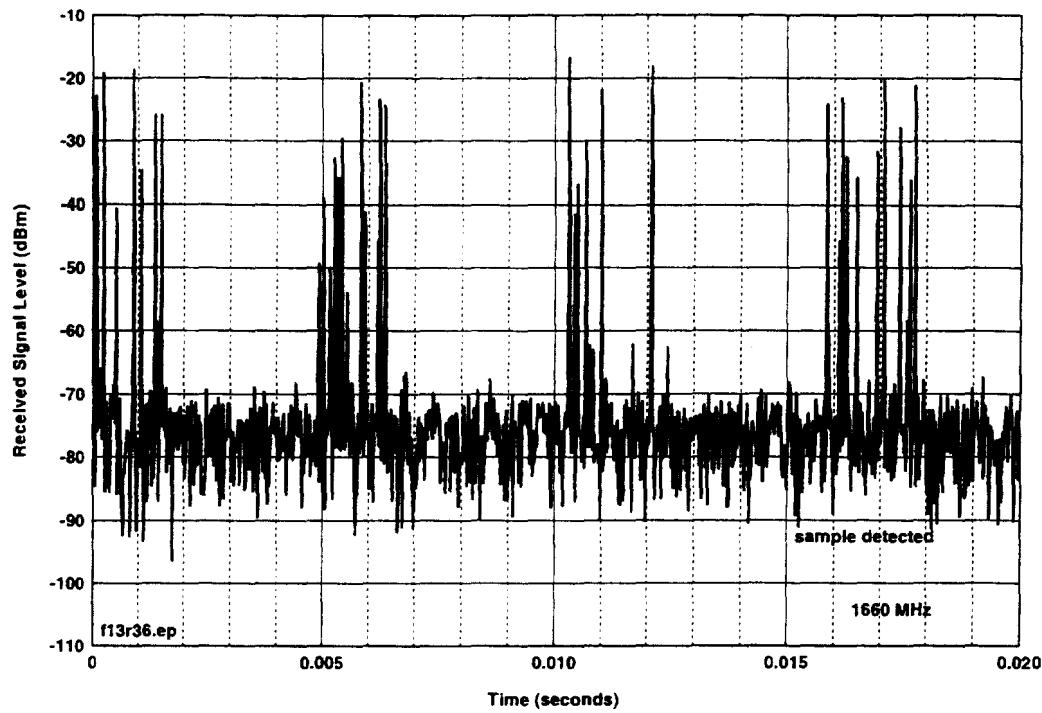


Figure D.B.31. Device B, 128-kBit/second mode, 3-MHz video bandwidth.

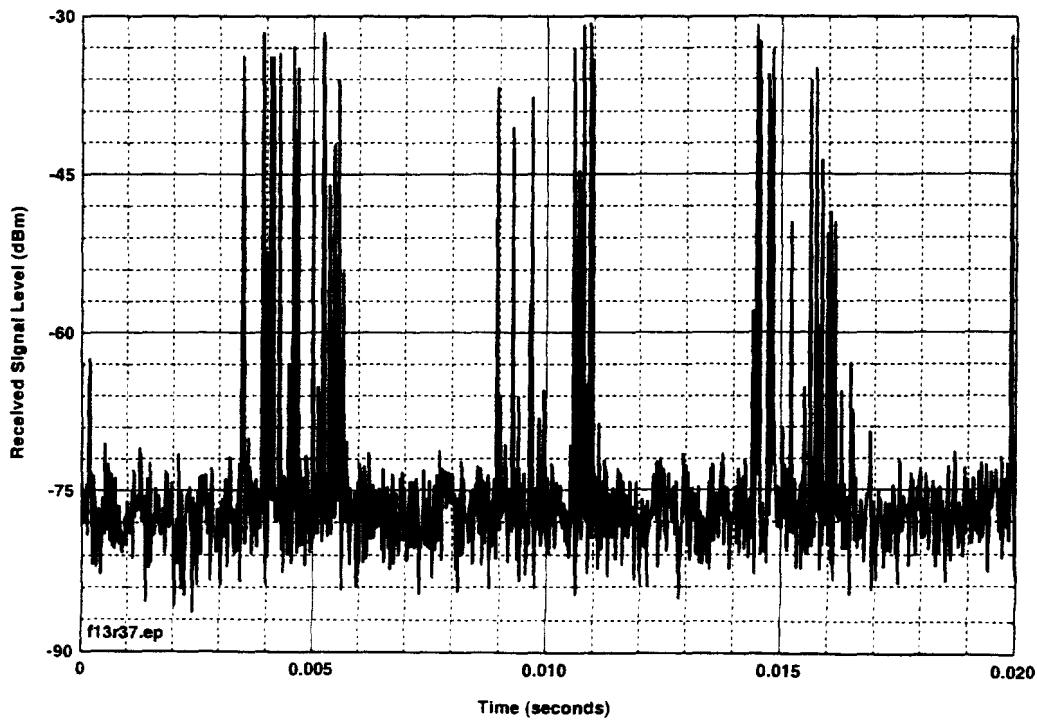


Figure D.B.32. Device B, 128-kBit/second mode, 1-MHz video bandwidth.

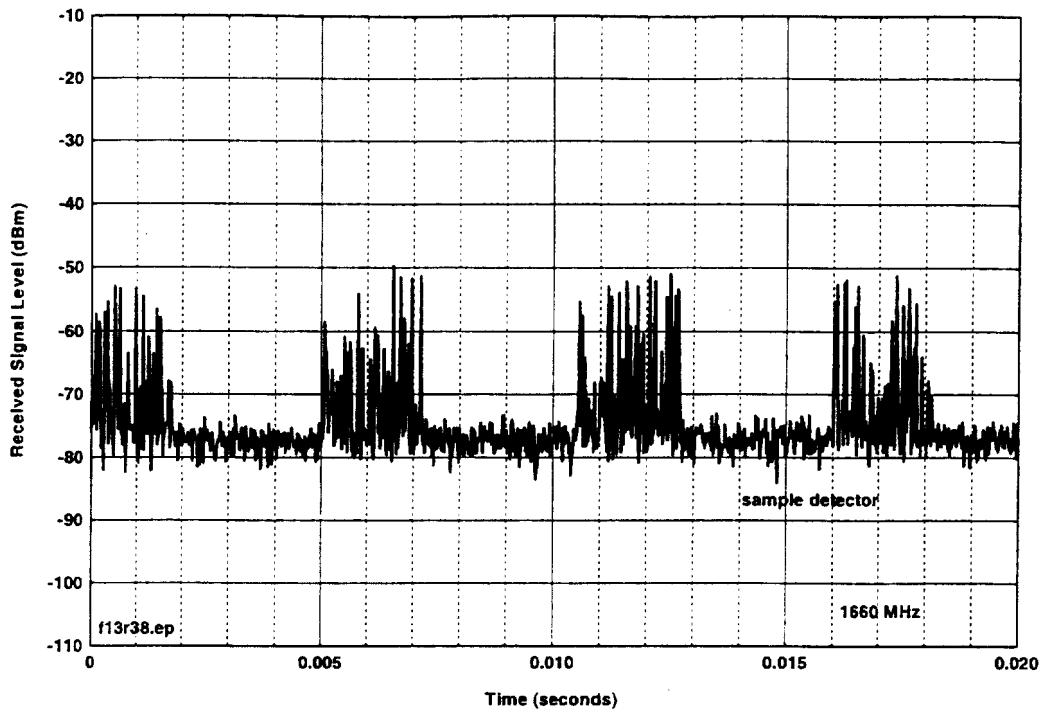


Figure D.B.33. Device B, 128-kBit/second mode, 300-kHz video bandwidth.

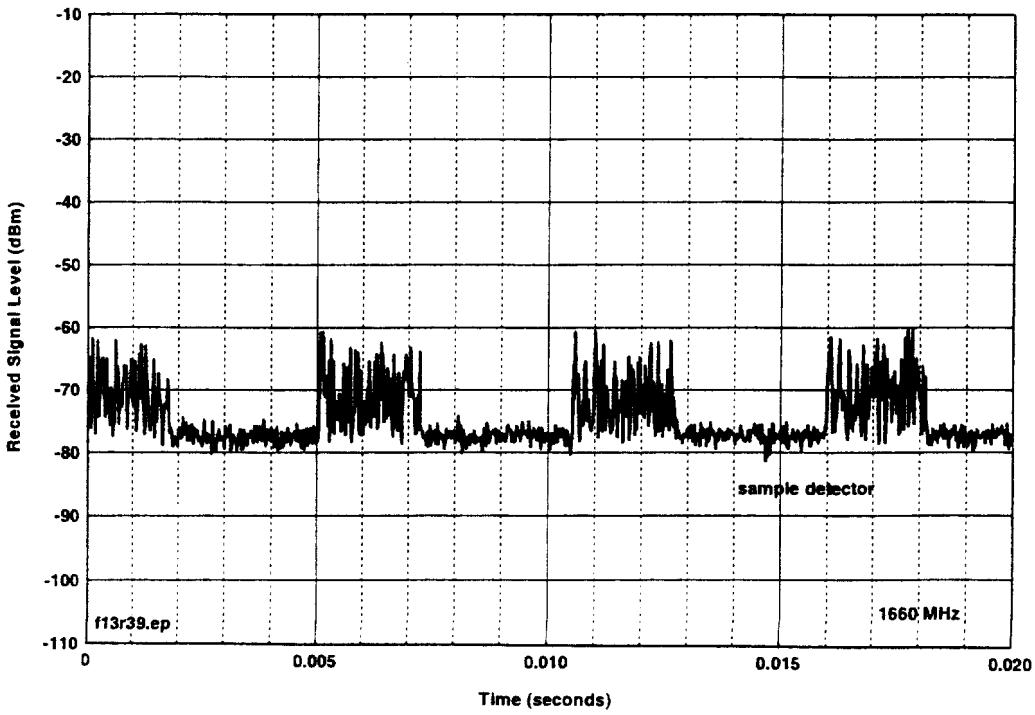


Figure D.B.34. Device B, 128-kBit/second mode, 100-kHz video bandwidth.

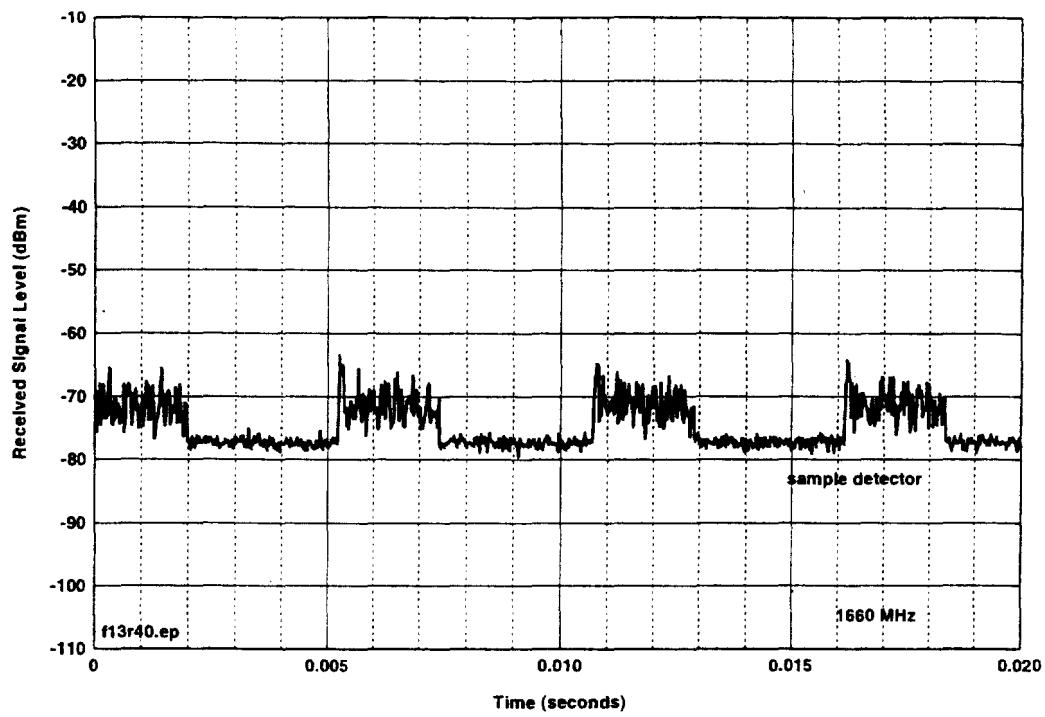


Figure D.B.35. Device B, 128-kBit/second mode, 30-kHz video bandwidth.

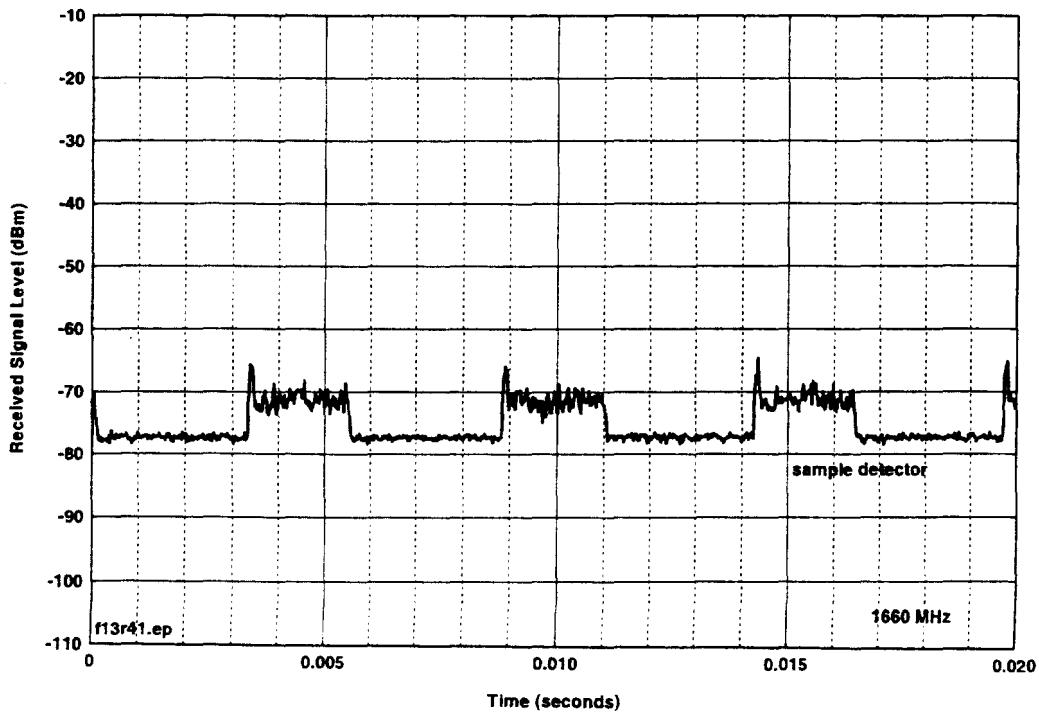


Figure D.B.36. Device B, 128-kBit/second mode, 10-kHz video bandwidth.

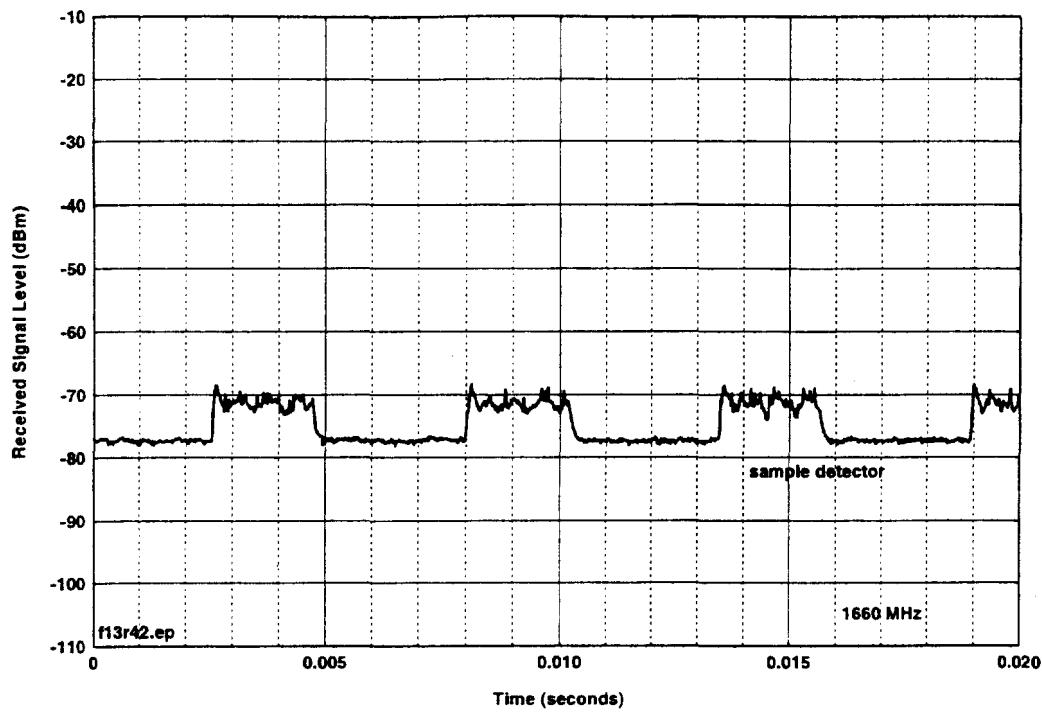


Figure D.B.37. Device B, 128-kBit/second mode, 3-kHz video bandwidth.

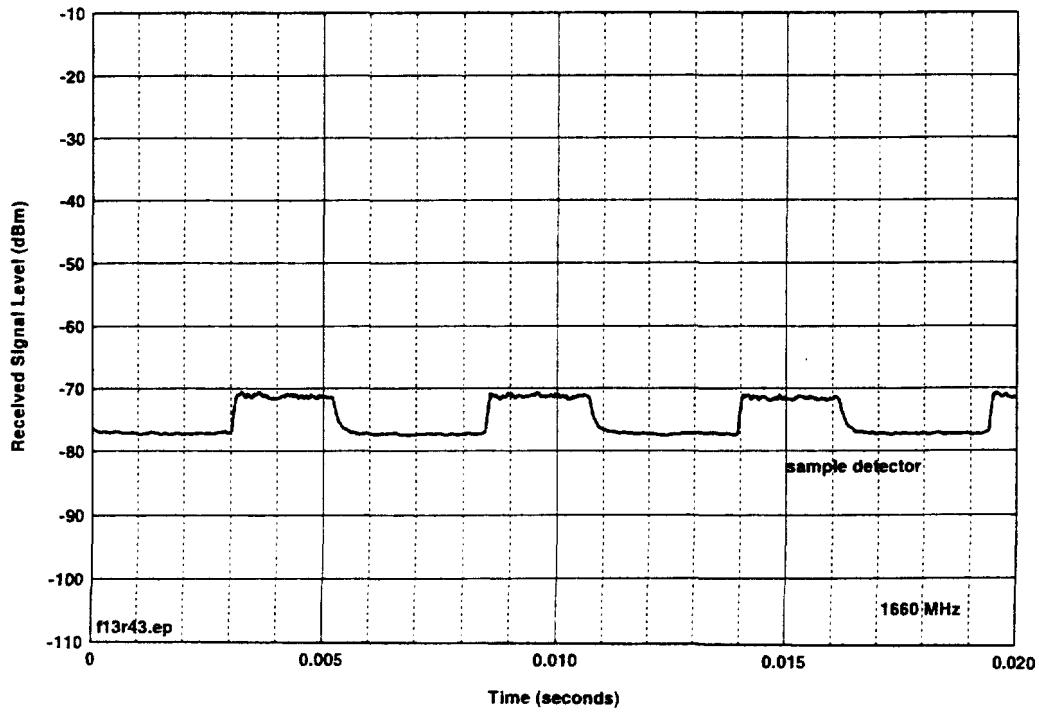


Figure D.B.38. Device B, 128-kBit/sec mode, 1-kHz video bandwidth.

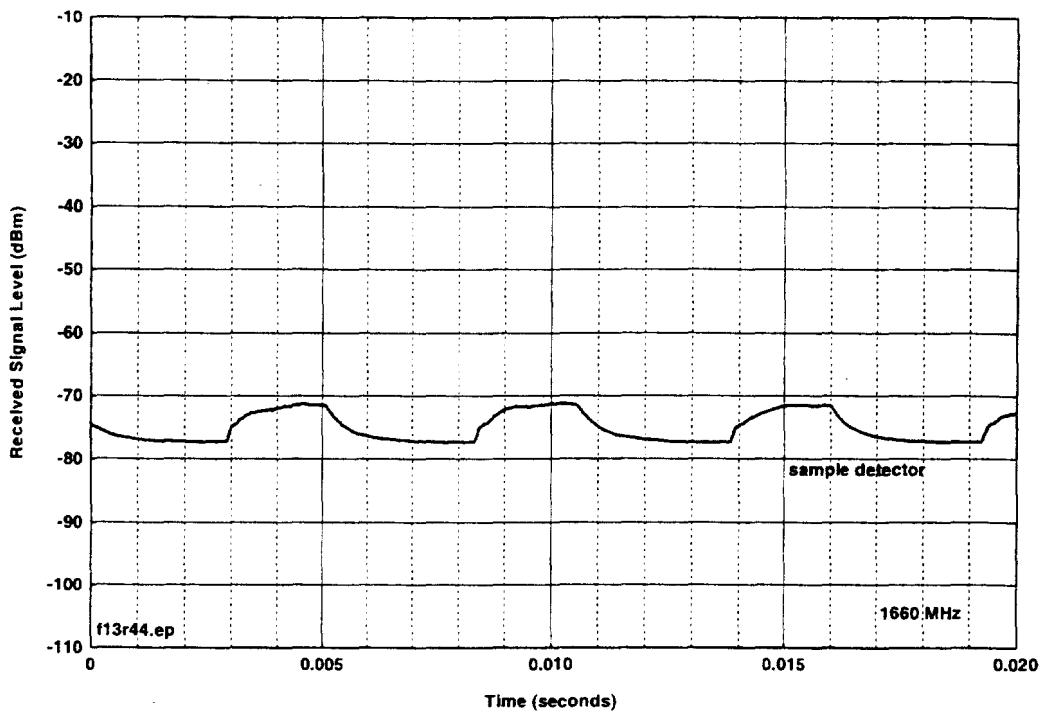


Figure D.B.39. Device B, 128-kBit/second mode, 300-Hz video bandwidth.

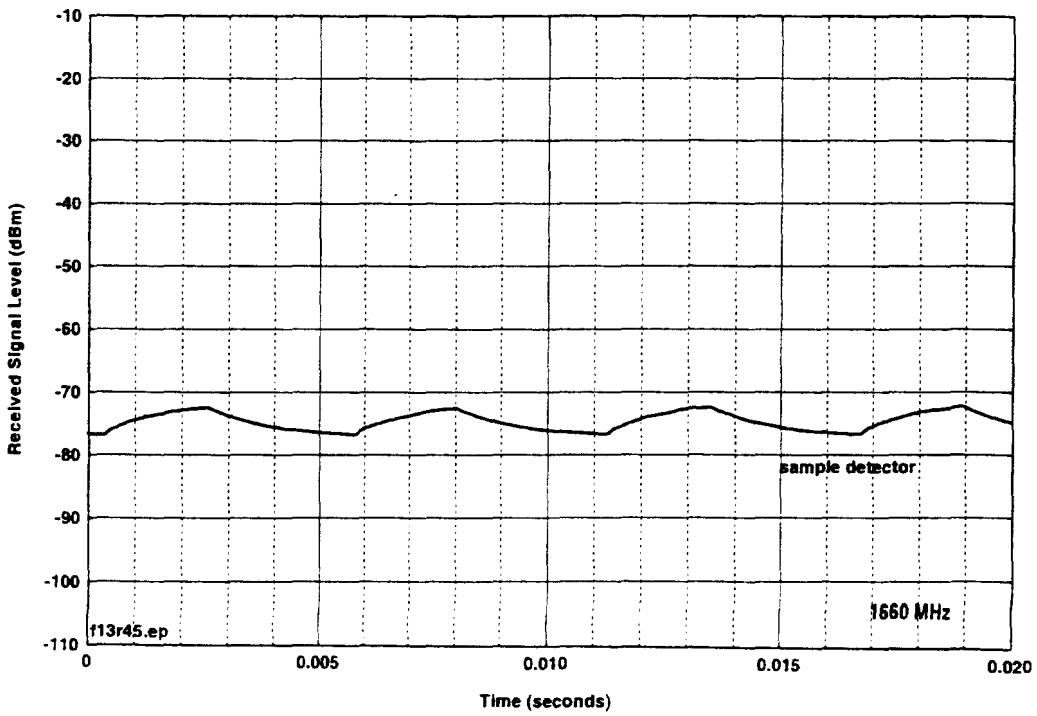


Figure D.B.40. Device B, 128-kBit/second mode, 100-Hz video bandwidth.

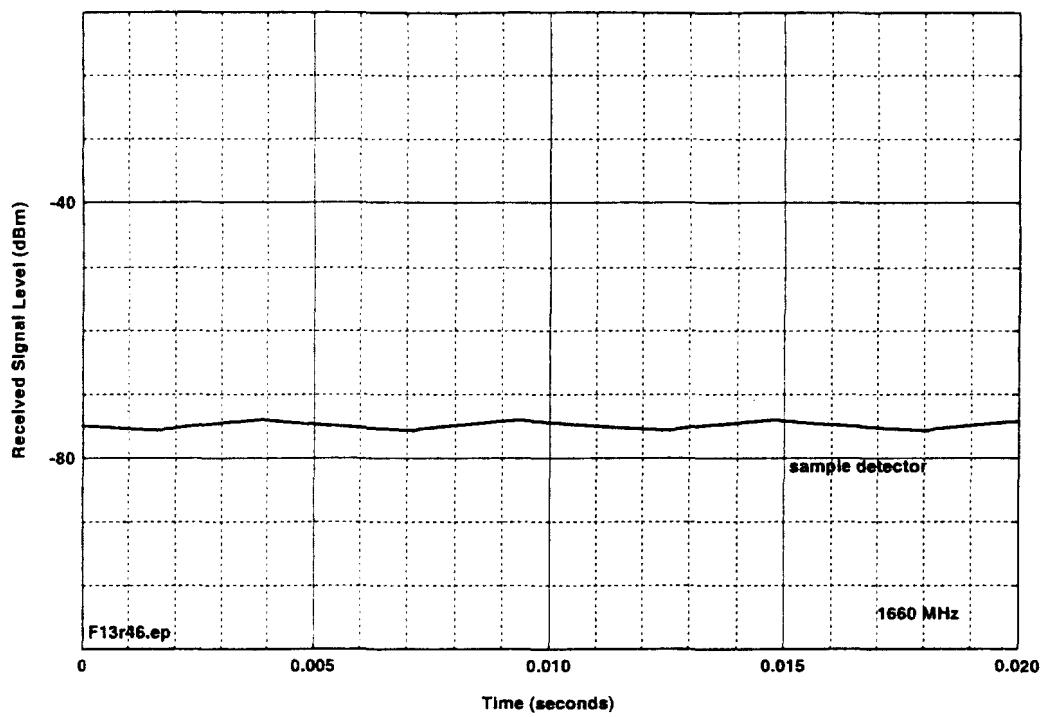


Figure D.B.41. Device B, 128-kBit/second mode, 30-Hz video bandwidth.

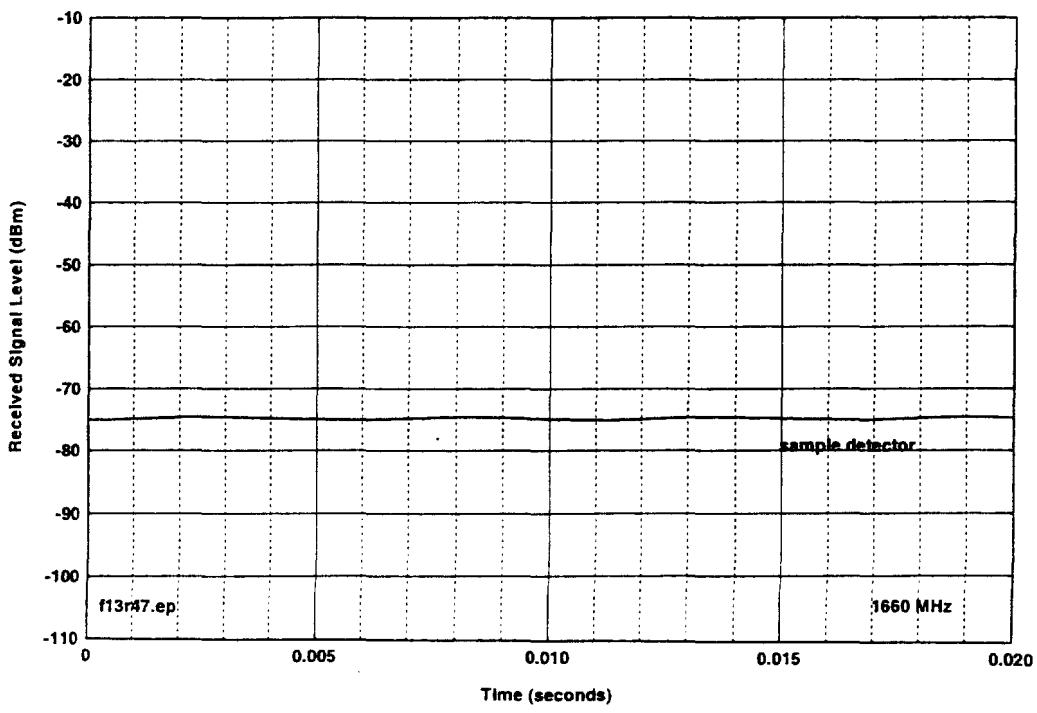


Figure D.B.42. Device B, 128-kBit/second mode, 10-Hz video bandwidth.

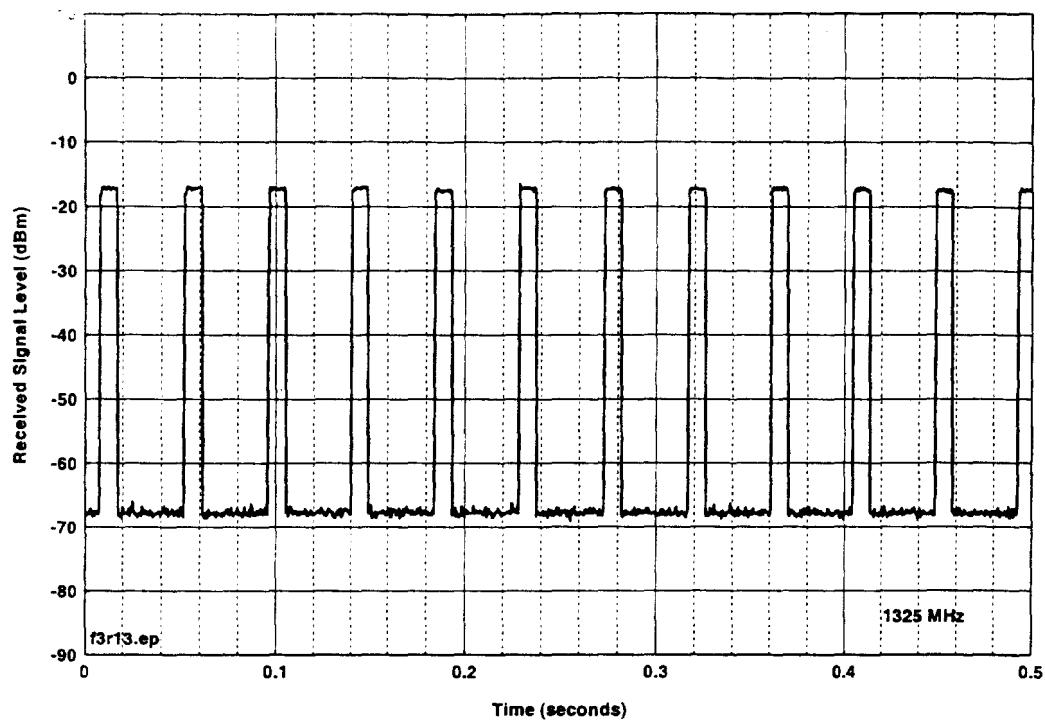


Figure D.B.43. Device B, 16-kBit/second mode, 3-MHz IF bandwidth,  
positive peak detector.

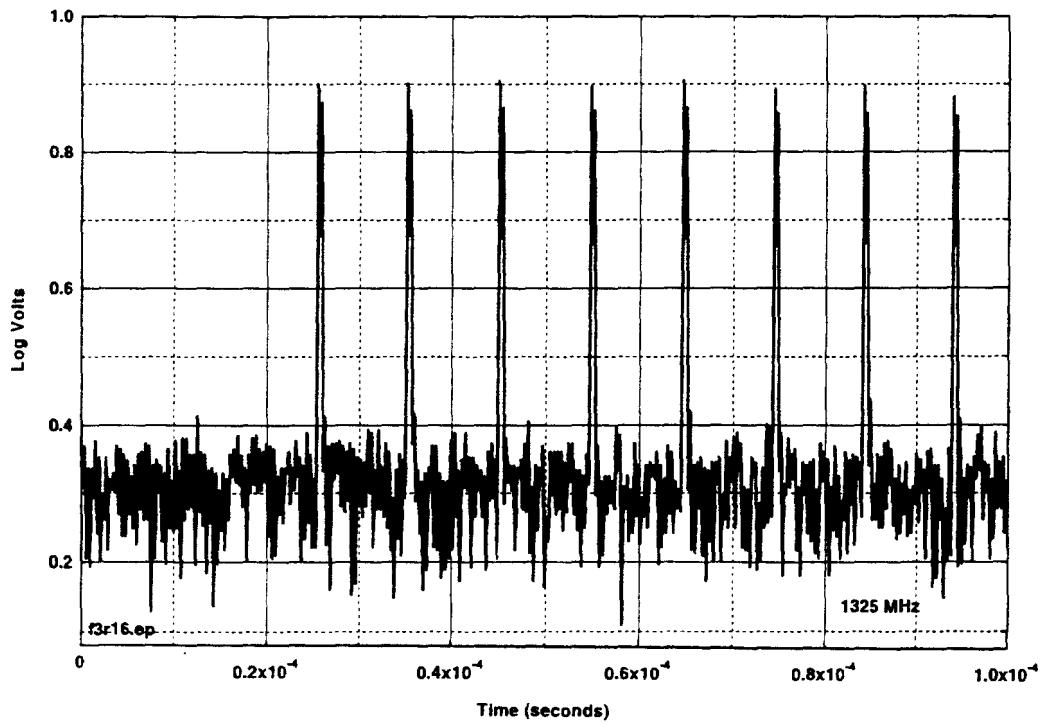


Figure D.B.44. Device B, 16-kBit/second mode, external log detector.

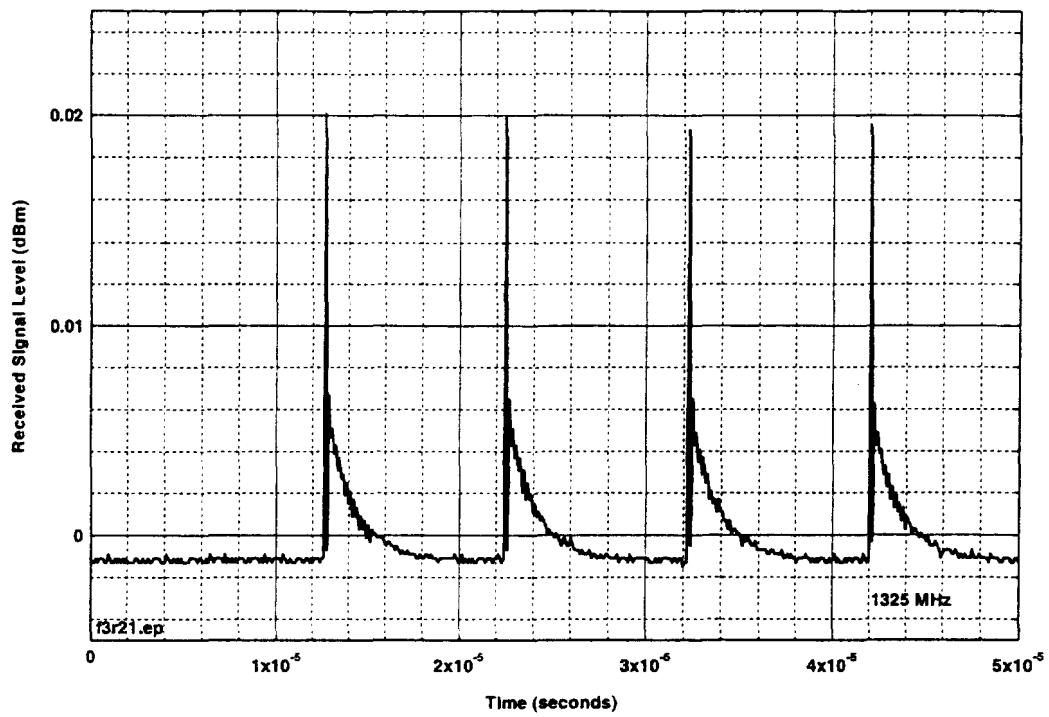


Figure D.B.45. Device B, 16-kBit/second mode, external detector.

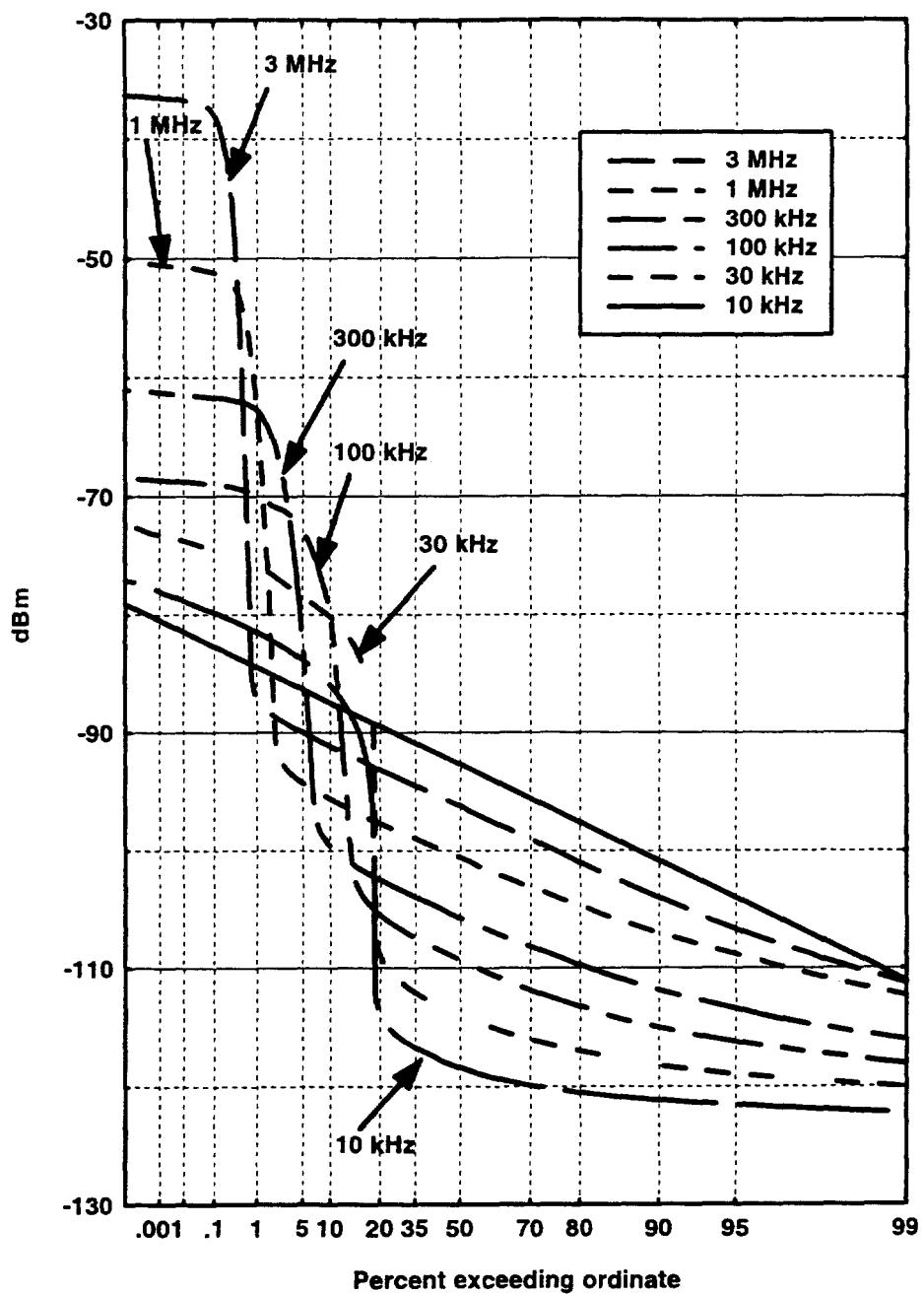


Figure D.B.46. Device B, 16 kb/s APDs.

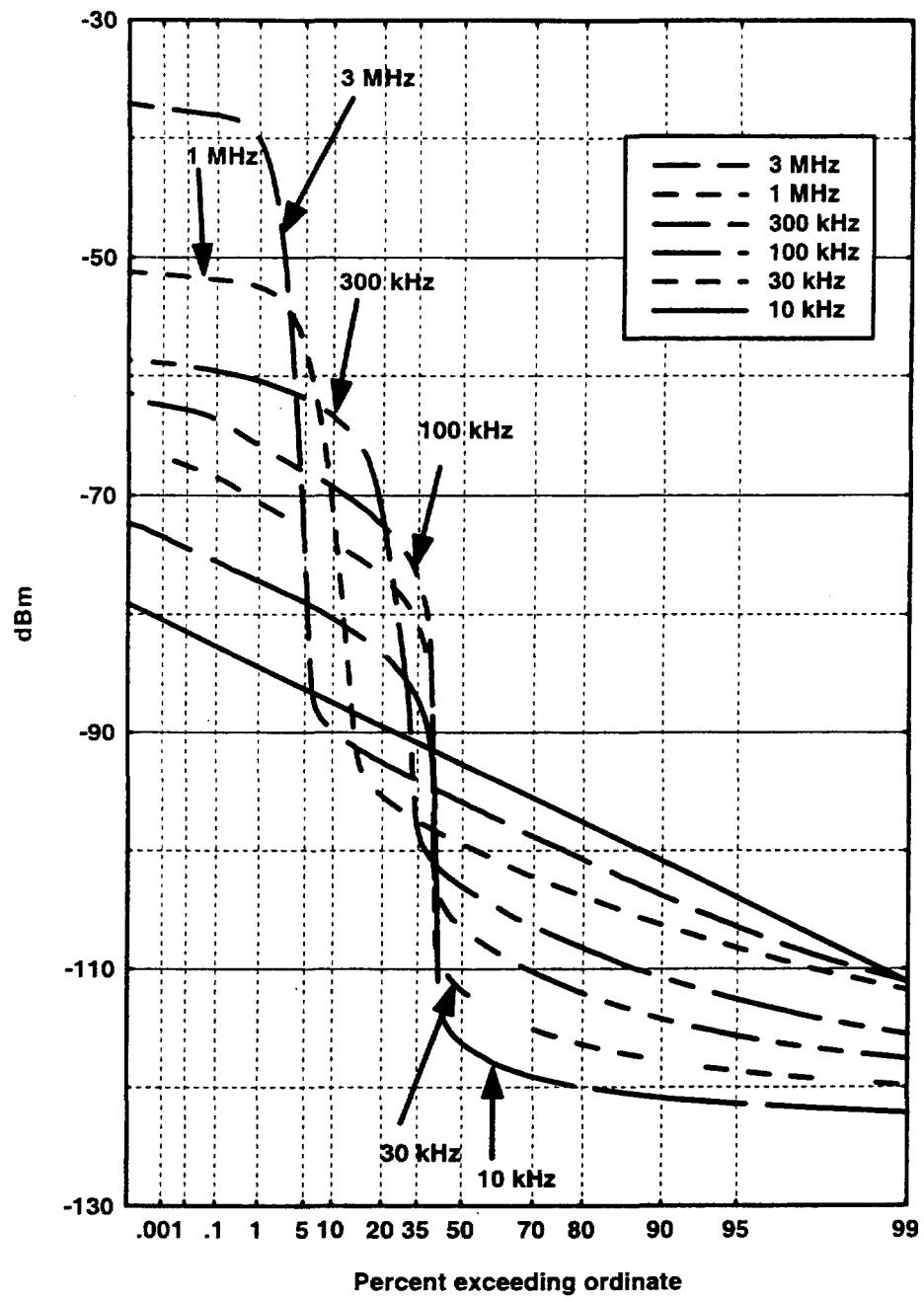


Figure D.B.47. Device B, 128 kb/s APDs.

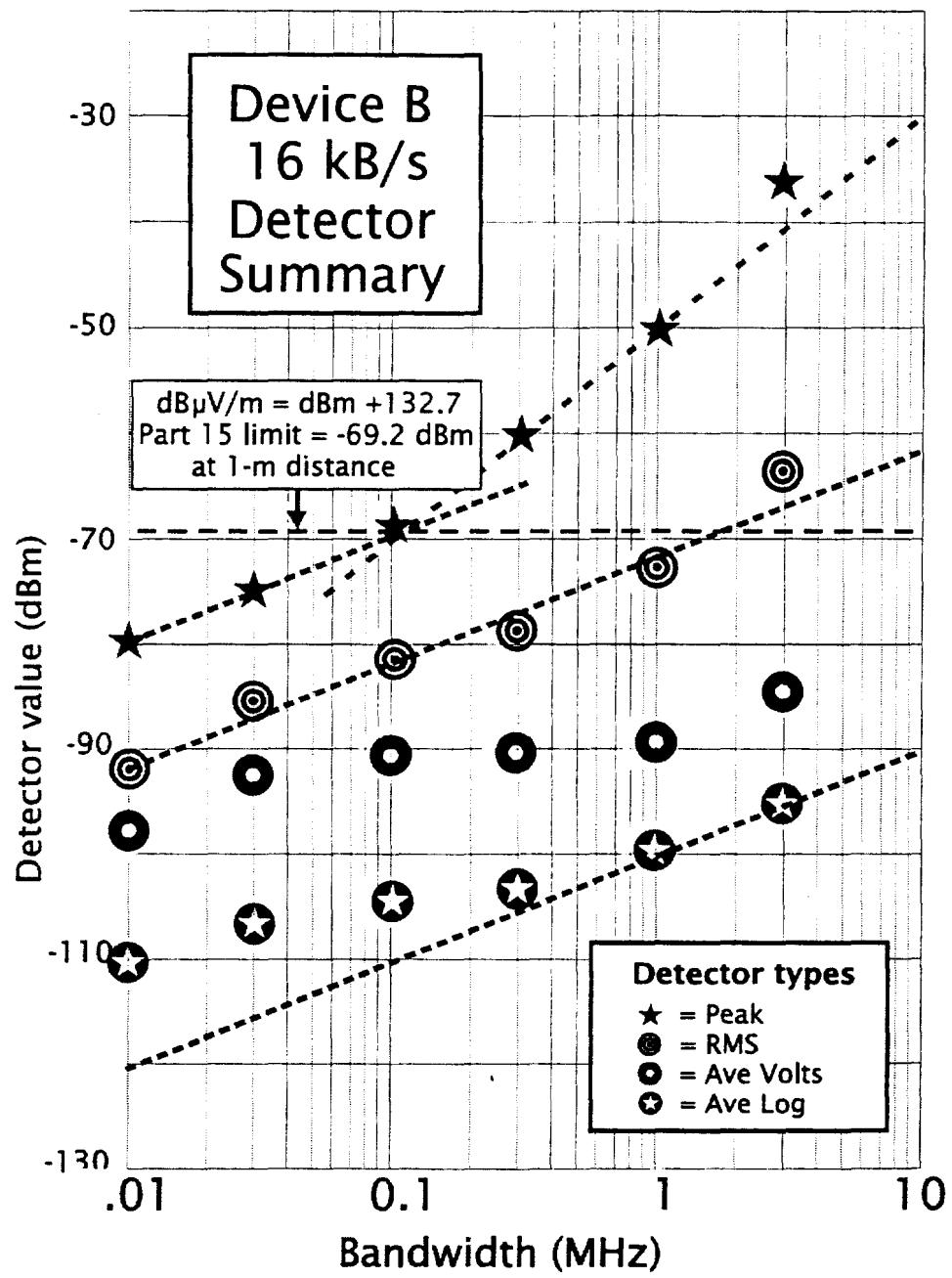


Figure D.B.48. Device B, detector summary.

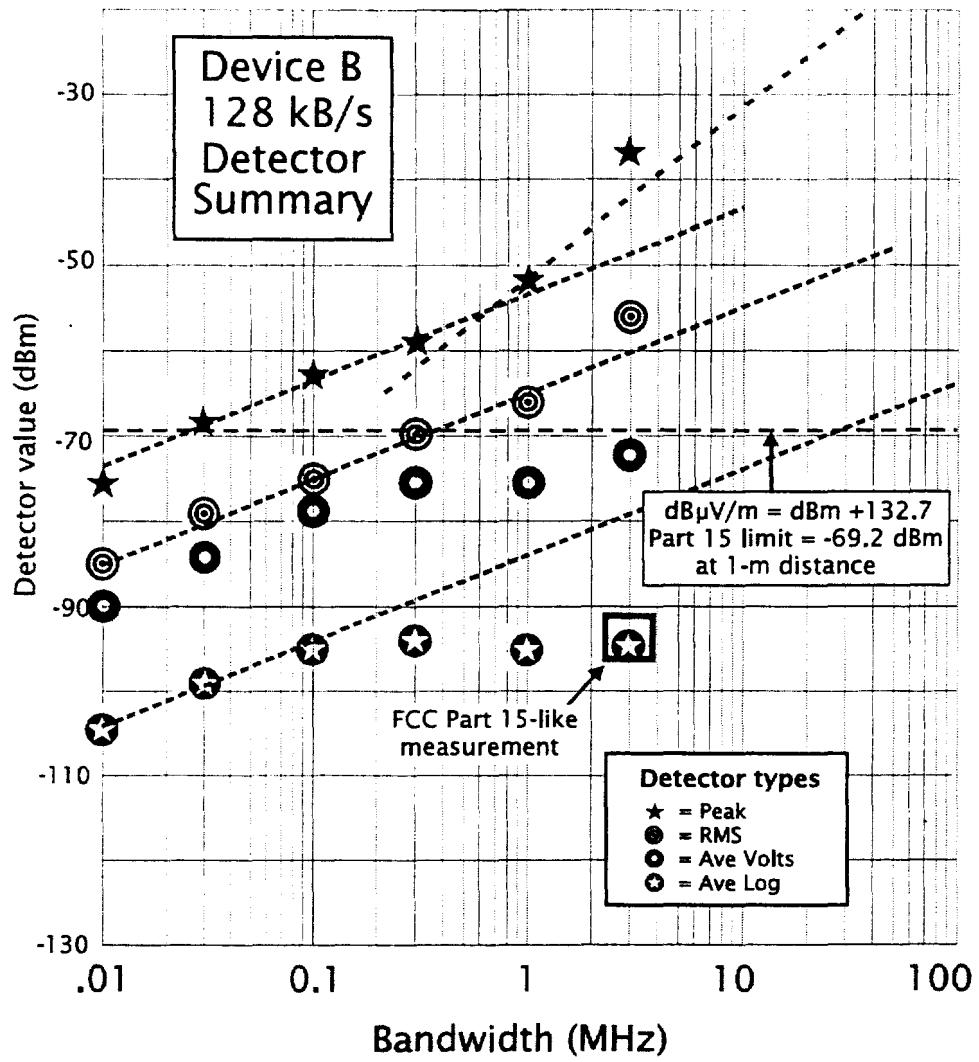


Figure D.B.49. Device B, detector summary